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© TIMES NEWSPAPERS LIMITED, 1981. Published by Times Newspapers, PO Box 7, London City, London EC3P 3DF, England. Typesetting by ComputerGraphics, 37-41, Compton St., London EC1A 3EE. Printed by Newsprint Ltd, 10, Upper Mersey, Northampton NN1 2HR, England. 10/1981. Registered as a newspaper at the Post Office, ISSN 0307-671X.



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UGC letter: making the best of a very bad job

The long awaited UGC letter, and the selectivity strategy for the first half of the 1980s which it contains, have sent such powerful shock waves through the university system that it may be some time before they fade away sufficiently to allow a calm and judicious analysis to be made of the strategy's strengths, weaknesses, and, of course, likely effects. As with all earthquakes it is best to wait until the dust has settled a little before the demand for at least a preliminary judgment on the UGC's strategy is great also.

Right at the start two points of great importance have to be emphasized. First, these are not new cuts. What the UGC did last week was to share out the cuts that were made last winter in the Government's most recent public expenditure White Paper when Mr Carlisle went back on his earlier promise to the universities that they could expect "level funding". The decisions to reduce the number of home students by 12,000 (or even 20,000 according to the CVP and the NUS, probably too alarmingly) so ensuring that the whole reduction of opportunity will have to be borne by the largest cohorts of 18-year-olds, and to cut the university grant back to a level that makes it almost inevitable that between 2,000 (the DES's hopeful underestimate) and 3,000 (the UGC's "political" overestimate) academic staff will lose their jobs, were not made by the UGC last week but by the Government last autumn during the last PESC round.

Secondly, the cuts have been made by the Government not by the UGC, by Mr Carlisle (really the Treasury) not by Dr Parkes. The UGC is simply carrying out its constitutional duty to offer the Government advice that is conventionally binding about how the reduced grant should be distributed among individual universities. The evidence is unambiguous that the committee fought hard against these earlier cuts (and more relevantly is now fighting equally hard against those malignant forces which seek further reductions in expenditure on universities).

There have been suggestions that the UGC should in some way have refused to implement these cuts, perhaps by resigning *en bloc*. Those who make such suggestions have a duty to propose an alternative that would have had less damaging consequences, an alternative that would have been not simply rhetorically or morally satisfying but practically effective in reversing cuts already decided. But it is unlikely that the universities would have succeeded where the Royal Navy failed. A much more likely result of any "resistance" by the UGC would have been to tear a large and probably irreparable hole in the protective convention of university independence with perhaps terminal consequences for academic freedom.

But to exonerate the UGC in this way is not to excuse the Government. The cuts are as senseless as they are vicious. They have not been imposed because of the Government's shifting assessment of the value of higher education, but as part of the Tory attack on the social state (the one-sided show (2,500,000 unemployed and another) of Margaret Thatcher's mad monetarist gamble. This means, of course, that a detailed and particular defence of the universities' interests, although essential, cannot be sufficient. Only by confronting the Government's whole strategy in a broad and practical way can higher education have any real hope of winning the final battle against the cuts.

Before moving onto the two most immediate questions - was the UGC right to be selective and if it was, is its selectivity strategy defensible? - it is

necessary to emphasize the radical nature of the UGC's proposals. They will not (quite) produce a three-tier system of universities, but they will produce a system that will be far more differentiated than has been traditionally acceptable in Britain. So it seems fair to describe the UGC letter of July 1 as a watershed. Nothing will be quite the same again. Ten universities have been protected almost absolutely from the cuts (although for different reasons), five are to suffer reductions in funding that could leave them teetering on the edge of viability (to be pushed over by any new cuts?), and the rest will have to absorb cuts ranging from the fairly mild to the severe.

The UGC, of course, has always been selective. Some universities have always been more generously funded by the committee than others. But the convention has always been that universities enjoyed a broad equality of treatment and so of status, and this equality was underpinned by academic practice. Perhaps it was a myth, but it was a powerful myth. Two new elements in the UGC's selectivity strategy have changed this. First, the funding differences are planned to become much greater over the next three years; and secondly, they have "come out" and become overt. A line has been crossed from formal uniformity to acknowledged diversity that will be almost impossible to recross. A golden myth has been punctured.

There is also the treatment of the unfortunate five. Of course, it can be argued that rough justice has to prevail and their sorrow is the price that must be paid to preserve as much as possible of the vitality of the system as a whole. But it is really right that a private committee, however trusted, should take private decisions that could have such grave effects on individual universities which after all are independent? Of course, not knowing why can in such circumstances be preferable to knowing why. But the doubts remain. Certainly the UGC should never contemplate the actual closure of universities without at the same time accepting that its reasons would have to be formally stated and open to public scrutiny.

So finally to the immediate questions. Was the UGC right to be so selective, or should it have adopted a largely passive role as the conduit of the cuts? In fact the latter alternative was not really available to the UGC. It is inherent in the nature of university funding in Britain that it is a subjective rather than a mechanical process. With the most massive and neutral will in the world the best that the UGC could have done would have been to "freeze" the accumulated pattern of resources in the past. But even this might have been difficult because of the absence of appropriate mechanisms for "neutral" distribution of the grant and because of the need for constant revisions and adjustments year by year in a funding system that has always relied on subjective judgments.

There are two other considerations that justify the UGC's policy of selectivity. The first is that the committee could not ignore the political environment. If it had, it would have been falling the PESC cycle already under way in Whitehall and the balance between the monetarist zealots and those ministers who have had enough of this fine line. Dr Parkes and his colleagues had to take those public actions that were most likely to add up to a strong case against further cuts in expenditure on universities. In this the UGC has probably been successful with its selective strategy for two reasons. First, the impression that the UGC is acting purposefully and decisively has been firmly lodged in Mr Carlisle's (and

maybe Mrs Thatcher's) mind. Secondly, the UGC's high profile and the saturation publicity it has provoked, although no doubt uncomfortable for Dr Parkes in the short run, have equally firmly lodged the message in the minds of the voters that the universities have been cut severely (and so perhaps should not be cut more?).

The second consideration is perhaps more long-range. It is that if the UGC had adopted a non-selective policy of "equal misery", it would have abdicated its predominant influence over the direction of university development to the research councils which by definition set in a highly discriminatory way. Rather further down that road, the prospect might have arisen of a splintered university system with the UGC providing not much more than basic funding for universities, mainly for teaching undergraduates, and the research councils and other agencies like Government departments divinely funding research and postgraduate study without much reference to the academic integrity of institutions. What then would be left of the idea of a liberal university?

In a confusing way the second question - has the UGC got its selectivity strategy right? - is both more and less important than the first question of whether the committee was right to be selective in the first place. It is more important because it is on the correctness of the strategy that the fates not only of individual universities but perhaps of the whole system will depend. It is less important because if someone or body must make an essentially subjective judgment about priorities within the system the UGC is much better placed to make such a judgment than any alternative candidate (the DES? the CVP? the AUT?). First, it has the constitutional responsibility. Secondly, it has the information (it always has to be remembered that the UGC weighs both economic and academic factors and then tries to forge both into an overall assessment about the needs/quality of a university).

Did the UGC get it right? In very broad terms the committee's selectivity strategy adds up to an endorsement of the traditional hierarchy of British universities (Oxbridge, civic/red-brick, new, technological), but with a strong and invigorating dash of electionism (the 10 "winners" are a mixed bunch drawn from all categories of university). In terms of the suggested subject balance the same balance is achieved: science and engineering are the winners, but again with sufficient exceptions to leave the arts and social sciences with some hope. In both respects the UGC's strategy probably corresponds fairly well to the "general will" of the universities faced with the unpleasant and unnecessary prospect of contracting resources.

However, there is one element in the UGC's strategy with which we profoundly disagree. We cannot accept the iron link between the level of grant and the number of student places. We cannot accept that the protection, let alone the improvement, of staff/student ratios is more important than the protection, or improvement, of pitifully low opportunity rates. In the last resort, which is firmly where the universities are, opportunity is more important than "standards". Indeed in the medium and long terms it may only be by expanding opportunities that the universities will be able to obtain the resources necessary to maintain standards. But again the UGC probably has the support of majority opinion within the universities in rejecting such an argument. In any case our quarrels are not with the UGC but with the Government over the cuts and with the cautious conservatism of the universities over the priorities of a post-Robbins system.

Laurie Taylor



"All right, Godfrey, you turn it. Heve".
"Thank you Michael. Pass the Ready everybody? Good day (Selects raffle ticket). "Number 10".
"Well, anyone know anything about Keele?"
"Isn't there a big wall road outside?"
"Four?"
"Four walls?"
"No, no. Four years. You're years".
"Oh, jolly good. Well let's get a little nice-and-nasty test. When's just near Stoke-on-Trent, Mum? Don't like the sound of that gentlemen can we have your usual way?"
(Shouts of "Black Country's heaps", "Just off M6").
"Fair enough gentlemen. Obviously Keele for the Big One number".
"Number five. Bath."
(Shouts of "Charming", "Daddy Georgian", "Old world", "Jane Austen" and "Roman").
"That looks unanimous. No one at all. Next".
(Number one. Aston."
(Shouts of "Concrete", "Spaghetti Junction", "Urban", "Motorway madness", "Traffic jams").
"Well, looks like the big one old Aston. Next".
"Number 13, York".
(Mass chorus of "Aah", "Mister", "Mystery place", "beauty").
"No problem there. Perhaps we should give them some extra money".
(General laughter).
"Next".
"Number six, Bradford".
(Cries of "Multi-racial", "hard decay", "Positively Dickensian").
"Chop, chop, Bradford. Next".
"Number 27, Salford".
"Funny isn't it. Some places are sound cuttable. You know what they shouldn't really have done in the first place".
"Yes quite. Well gentlemen, you're on Salford please".
(Shouts of "Declining North", "Hill and grime", "Snake and snake", "Veritable unknown").
"Quite obviously very, very big there. And finally in this Number 28, Salford".
"Well that's a nice place you're Hills, Scotland, even a bit of a hill".
"Well no cuts there then Godfrey. I'm sorry to bother you but I can't help notice we've rather made our choice of universities on the basis of a charm".
(Chorus of "What's wrong with it? Just because you wanted to be a straws", "What do you expect Reason?").
"Now don't misunderstand me. I've given you total lack of any reliable information, this is a good criterion as any other, but I would we should... um... obvious to the public".
"Fair point, Ralph".
"So, and this is the long and hard way not just push pretty old into the Big Cut industrial collapse".
"Sheer genius".
(General applause and shouts of "He'll baffle 'em", "Try and that one").
"Thank you gentlemen. Now we turn to the more serious task of the actual size of the cuts. Can please clear your papers from the centre of the table so I can give you a damn good roll".
(Excited shouts of "Roll 'em up", "Here comes the chopper")

The Times Higher Education Supplement

July 17, 1981 No 454 Price 45p

Europe's research chiefs in brain drain crisis talks

by Robin McKie
Science Correspondent

Prospects of a new brain drain, with many of Britain's brightest university scientists going to America, are worrying academic administrators. At a recent meeting of British, American, Nato, French and German research chiefs, the prospect of a large shift of postgraduate scientists from universities in Western Europe to the United States was discussed as a serious likelihood in the next few years.

The director of America's National Science Foundation, Dr John Slaughter, and his deputy, Dr Donald Langenberg, told the meeting that between 1,000 and 2,000 faculty positions were believed to be vacant in the US, a significant fraction of which have been unfilled for a year or more.

Particular areas of shortage in trained manpower, included engineering and computing, analytic chemistry, biotechnology and certain areas of physics, such as condensed matter physics. This compared with the picture given by Europe's research chiefs - Britain's Sir Geoffrey Allen, of the Science and Engineering Research Council; Professor E Siebold, of Germany's DFG; and Professor J Duing, of France's CNRS - where economic and age structure problems mean little chance of many new posts appearing in the next few years.

Combined with the explosion of new biotechnology firms being set up throughout the US which are seeking scientists to support ambitious research programmes, a serious shift in young academics moving out of Europe was predicted. Indeed, the problem affecting biotechnology appears to have already begun in Britain for at a recent conference in Renfrew, Professor John Smith,

of Strathclyde University's applied microbiology department, complained that many of our best young biologists were being attracted overseas to properly funded research centres.

However, at the international research chiefs' meeting, which was also attended by Professor R. Chabal, assistant secretary general for scientific and environmental affairs at Nato, and Professor H. Curien, president of the European Science Foundation, little hope was voiced for halting the movement.

On a small scale, improved international mobility would be welcomed in Europe, which has recently suffered from a lack of scientific exchange. However in large numbers, a drain of top manpower would not easily be reversed. One scheme, favoured by Sir Geoffrey Allen, would allow scientists to gain experience in America and then create special posts to entice them back to Britain.

The brain drain would not be strictly one way, the US delegates pointed out. Europe's strength in high-energy and neutron physics is expected to attract young American scientists, although this is likely to be done on a small scale compared with the flow in the other direction.

The problems for Britain are not likely to be confined to loss of postgraduate manpower. Mr Brian Pott, of the Central Services Unit for University and Polytechnic Careers and Appointments Services, warned that general industrial stagnation in Britain compared with the growth of mineral and oil exploitation in other countries, particularly Australia, could result in a major drift of young applied science graduates to other countries.

DES spells out college plan

by Patricia Santinelli

A radical new approach to the funding of voluntary colleges prepared by the Department of Education and Science may lead to the announcement of redundancies by the autumn, a reduction in student numbers and the possible closure or merger of some institutions by the mid-1980s.

Colleges whose budgets are to be cut by 7 per cent over two years from 1982 in line with Government expenditure plans have been sent details of the new approach together with proposals for achieving savings. It concentrated on staff salaries this would mean a 14 per cent staff cut by 1984 and a subsequent drop in student numbers.

Colleges would be competing for scarce resources leading at first to departmental closures and eventually complete closures of "weak" institutions.

From 1982 the 27 institutions would no longer be expected to submit staff and student estimates, instead they would be told how much funding was available for whole sector and then to submit one base and two supplementary financial estimates. This would allow for reductions or increases to be allocated other than on a pro rata basis.

This means that colleges which will by 1984 have experienced a real cut of 12 per cent in their budgets would be forced in 1982/83 to compete for their share of around £54m, a £1m drop on the previous year and in 1983/84 have to operate within a further reduction of £3.6m. The department points out that although it no longer expects to control staff student ratios, colleges will have to indicate expected levels. The DES does not recommend the closure of colleges because this would not achieve savings within the period.

It has not ruled out the possibility of merging the colleges with main-tained institutions, although it foresees problems, particularly in the case of denominational colleges.



Sculpture by third year student Philip Howard on display at Bristol Polytechnic fine art department degree show.

Survey reveals falling standards

by Paul Flather

"Creeping erosion" of academic standards and growing concern about the effects of further cuts on public sector higher education are revealed in a survey of more than 100 polytechnics and colleges.

The Council for National Academic Awards admits that replies to letters it sent out in March asking for details about resource difficulties "indicate significant grounds for concern". Some colleges say they are unable to absorb more cuts.

The CNAAA says in internal correspondence: "While it could not be said that a crisis point had been reached in the financial year 1981-82, there was widespread unease about 1982-83. In a number of cases it appeared that actions which had been taken had brought institutions to the limit of their manoeuvrability without a radical effect on courses".

It is particularly concerned that equipment is rapidly becoming out of

date although it plans to collect further data on this before raising the issue publicly.

Now the CNAAA is advising all its visiting boards to take particular note of the resource difficulties of courses they are inspecting, looking for example at the effects of declining book provision or fewer field trips.

Its hands are still tied to some extent because its main concern is with academic standards and there is no clear link between falling resources and declining standards. However it decided to carry out its survey in the face of unprecedented cuts.

Local authorities are also seriously concerned about the damage to public sector higher education which will be caused by the Government expenditure cuts already outlined up to 1984-85.

A confidential paper prepared by the education expenditure steering group of government and local au-

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Annan draws up secret cutting list

by Ngain Crequer

A personal and confidential paper by Lord Annan, vice-chancellor of London University, to members of Court has listed the departments which he thinks should be closed or merged.

In the paper, written after he had clarified certain matters with Dr Edward Parkes, chairman of the University Grants Committee, Lord Annan says it would be impossible to distribute the grant to the colleges on a pro rata basis, as in the past.

But if the Court, chaired by Lord Scarman, heads the advice it is bound to create a constitutional row. The Association of University Teachers, backed up by some college heads, is likely to take out an injunction against it.

It will use the university statutes which say that "... before determining any question of finance which directly affects the educational policy ... the Court shall invite the opinion of the Senate." The Court meets to discuss the paper and to distribute the £18m grant next Wednesday.

Lord Annan asks the Court whether it wants to endorse the policy of reducing numbers in the physical sciences in the smaller schools and increasing them at Imperial, Queen Mary College and University College.

The paper says that UGC recommendations "must gravely affect the ability of the Court to provide funds

CLEA unveils alternative national body

by John O'Leary and Charlotte Barry

The local authorities this week unveiled their own plans for a national body to "plan, co-ordinate and rationalize" higher education in polytechnics and colleges.

Under the system, launched at the annual conference of the Council of Local Education Authorities, a small body composed largely of representatives from the authorities and staff in the institutions would take control of the Advanced Further Education pool. Unlike the Department of Education and Science's proposal, it would cover the whole of the maintained sector.

Local authorities would continue to be responsible for their institutions and would agree academic programmes with the national body. Reconstituted regional bodies would liaise with L.E.A.s, particularly over part-time and short full-time courses, which would remain outside the ambit of the national framework.

The document seeks to allay DES fears that a local authority body could not enforce its policies. It stresses that decisions would be made by the authorities while being democratically accountable to them. Her Majesty's Inspectorate and the DES would attend meetings as assessors, facilitating links with the universities.

Although the 13-page paper outlining CLEA's scheme proposes to "limit the size of the body", a previous stipulation that there should be 10 members, six from the local authorities, has been erased.

There would be a secretariat which "combines academic and financial expertise at a high level, and which would exercise its functions with the maximum possible independence", and voluntary colleges would be covered by the new mechanism and represented if they chose.

The paper sets out the basis for a new funding system, which would set student numbers, agree a formula for converting part-time numbers to full-time equivalents and weigh student numbers according to subject areas. Dr William Taylor, director of the London University Institute of Education, immediately attacked the plan at the CLEA conference. He said that authorities could retain sufficient participation in the making of higher education policy under the DES proposals.

At a press conference to launch the scheme, Mr Alistair Lawton, chairman of CLEA, promised that the local authorities would fight to retain their traditional role in higher education.

Call for extension of PGCE

by Charlotte Barry

The postgraduate certificate of education course should be extended to two years, the director of London University's Institute of Education said this week.

Dr William Taylor told the Council of Local Education Authorities conference in Southampton that the new two-year course could incorporate the major elements of the present one-year PGCE with a systematic induction programme.

The second year would consist of a teaching "internship" in which the new teacher would receive a training allowance somewhere between the student grant and the relevant Burnham salary point for age and qualification.

"I recognize the attitudes of the teachers' unions to such a proposal are crucial, but I believe that it is not impossible for employing authorities, training institutions and teachers to co-operate in ways that would permit a much improved introduction being designed and implemented," he said.

Dr Taylor added that this should also be possible in spite of further cuts in teacher education. "To assume nothing can be done without substantial new money is a counsel of despair. It is also an excuse for inaction and an alibi for failure," he said.

However he warned that if PGCE members were cut drastically in the short run and BEC recruitment remained substantially below target in-service education and training would be threatened.

Dr Taylor criticized the lack of research into education, which accounted for less than 0.2 per cent of educational spending. Out of half a million teachers only 1200 master's degrees and 100 doctorates in education were awarded every year. "Our educators are under-educated, and as things stand, are likely to remain so," he said. "If we are to improve education in the 1980s we need more facts and findings, more knowledge and more understanding, better insight, more subtle and wide-ranging interpretation."

Second poly waits for APT decision

by David Jobbins

The pay and conditions bargaining machinery for polytechnic lecturers in London has run into further trouble.

A second polytechnic has failed to ratify plans which would give the National Association of Teachers in Further and Higher Education sole negotiating rights for the five inner London polytechnics. But the Polytechnic of Central London emphasized that it had not turned the plan down flat.

PCL, like the Polytechnic of North London, has deferred a decision until it is clear whether the Secretary of State, Mr Mark Carlisle, will confirm his provisional decision to give the Association of Polytechnic Teachers a seat on the Burnham further education committee.

The Inner London committee is being reconstituted so that union representatives meet across the table from the five directors and chairmen of governors. The Inner London Education Authority is withdrawing to observe status under the new scheme, but APT members at PCL and PNL are determined to ensure their non-TUC union is included as a full participant.

The proposals have already been passed by South Bank and City Polytechnics. Backing came from Thames Polytechnic with the proviso that the question of APT membership could be reopened if there was recognition at national level. But the committee will never meet unless all five agree.

SERC to fund retraining

by Robin McKie
Science Correspondent

A revolutionary £2.4m scheme aimed at re-educating engineers and scientists in industry is being planned by the Science and Engineering Research Council and the Open University.

The technological topping-up programme, which would consist of two sets of courses in computing and manufacturing technologies, would be broadcast by the Open University between 1982 and 1991 and would be funded by the SERC. It is intended to update the technological knowledge and scientific expertise of graduate staff who have worked in industry for between five and 15 years but who are reluctant to jeopardise careers or who are having difficulty obtaining more than a few weeks' release from their companies.

The carefully structured programme would overcome this by being made up of individual modules on separate subjects. Students could attempt only individual modules or work for a diploma by completing a minimum of eight of these units. It is also intended that courses, together with a related project, could lead to an MSc level qualification.

Part-time tutors and educational consultants would be hired by the OU to implement much of the scheme and it is also planned that summer schools would be arranged "at appropriate centres of excellence".

Of the two courses, the first, *Computing for Industrial Management*, would be aimed at engineers, scientists and managers in industry whose work has been transformed by recent developments in computing and microprocessors. It would consist of seven compulsory units - software engineering, computer systems

architecture, operating systems, real-time monitoring systems, system modelling, real-time control systems and project management. There would also be a choice of one of three optional units - robotics, man-machine interaction and computer aided design.

The other course, *Manufacturing for Industrial Managers*, is to be aimed at middle managers, over the age of 30, who are operating in a technical or supervisory role at their companies. Modules would include those on manufacturing processes; operating, planning and organization of manufacturing systems; engineering management; polymers; robotics; computer aided design; new materials and processes; and joining and assembly.

The Rubber and Plastics Process Industry Training Board is to pay half the development cost of the polymers module.

The building was bought from the Catholic church for £1m to ease the acute accommodation problems of the polytechnic singled out for criticism in a report by the Council for National Academic Awards. The problems date back to a deal over a site at the Albert Docks which fell through several years ago.

An initial report by the council estates department estimated it would cost £1m to put the building in order for use by the 1,200 students. The report found dry rot, inadequate heating and lighting facilities, and the need for urgent roof repairs.

Councillors now say the report went far beyond its remit and the actual cost to "make the building safe and habitable" would be about £300,000. A second report has just been commissioned.

Poly's repair bill upsets pruning scheme

by Paul Flather

A major row in Liverpool over unforeseen repair costs of up to £1m to a building bought recently for use by the polytechnic has upset the city's new plans to prune higher education costs to meet a total £3m deficit this year.

The first formal meeting of the city council's working party on future higher education provision has recommended the closure of the F. L. Calder college site, with all teaching transferred "lock, stock and barrel" to another site.

This recommendation is now being considered by various city committees, and will come up before the full city council, probably in the autumn. If agreed, as likely, home economics would be taught at F. L. Calder while physical education teaching at I. M. Marsh College.

The working party will then decide whether to sell the Calder site altogether, or use it to relieve accommodation problems at other Liverpool colleges, for example the college of Crafts and Catering.

Meanwhile the National Association of Teachers in Further and Higher Education, already concerned by delays in settling budgets for higher education provision in the city, has expressed alarm at the costs of repairs to the recently purchased Notre Dame building.

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News in brief

NUPE picks new leader

A senior university manual worker official is to become the new general secretary of the National Union of Public Employees. Now 36, Mr Rodney Bickerstaffe will be the youngest man to hold the post.

He will succeed Mr Alan Fisher, who will retire in May 1982. Mr Bickerstaffe, a sociology graduate from Newcastle Polytechnic, joined NUPE in 1966 as an area officer, became divisional officer for the newly created northern division in 1979 and moved to London in 1977.

The greatest reduction among groups of countries by the ODA was 43 per cent from the Caribbean Community. Of individual countries, Mauritius sent less than half the numbers of a year earlier and Sri Lanka 46 per cent fewer.

Although the ODA points out that the 15 per cent decline registered by Gibraltar, whose students pay at the home rate, shows that not all the reduction is attributable to the rise in fees, the EEC figure stands out. Its 2,100 entrants in 1980-81 represented an 11 per cent increase.

Nigeria also sent 326 (or 12 per cent) more students, but Commonwealth countries as a group were down by a quarter.

The figures were produced for the Commons Select Committee on Foreign Affairs' overseas development sub-committee, which has also received a new submission from the United Kingdom Council on Overseas Students Affairs. Part of this graphically illustrates the drift away from Britain, listing visa applications for universities in Ontario. Applications from Mauritius show a four-fold increase.

The sub-committee is conducting a brief follow-up inquiry into the impact of full-cost fees. This week it heard evidence from the National Union of Students and the overseas Students Trust, whose representatives clashed over the suitability of the Trust to advise the Government on fees policy.

Mr David Aaronovitch, president of NUS, repeated the union's doubts about whether an organisation "set up to serve the needs of certain large companies" was the most appropriate to advise on Third World issues. But Mr Martin Kenyon, director of OST, told the committee that NUS had accepted £70,000 from the Trust over 10 years, financing its own adviser on overseas students from the money.

Mr Aaronovitch also told the MPs that the increased fees had produced a disproportionate number of wealthy foreign students, resulting in hostility among their British counterparts.

But a second letter will go to some 60 students pointing out course changes. Students would be offered a closely related course. The most extreme change would be in human communications likely to disappear, where a student would be offered an alternative single honours or combined honours course with common components of the old course. There could also be some amalgamation of engineering courses.

But it is unclear as to whether Aston is breaking a contract with potential students by the move and it is trying to seek clarification from the Universities Central Council on Admissions.

A university spokesman said: "I cannot comment on the legal situation at this stage."

Leeds University has effectively rebuffed the University Grants Committee selectivity strategy. A recommendation to Council this week proposed a 6 per cent cut across the board for 1982-83 plus a 4 per cent cut by the end of 1983-84.

Lancaster Senate will make decisions on cutbacks at a special meeting on July 21 when a development committee will recommend the winding down of the Russian department over the next two years.

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Labour pledge

A future Labour Government would reduce the level of grant to universities and colleges where it found that a "disproportionate number of students" are drawn from private schools, the final text of the party's policy document on private education, published this week, says.

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Overseas enrolments down 14 per cent

by John O'Leary

Only one group of countries sent as many students to Britain after the introduction of full-cost fees as before: the EEC, whose students were exempted from the new charges.

Revised statistics compiled by the Overseas Development Administration put the decline in first-year enrolments from abroad at 23 per cent for the year 1980-81. Overall, numbers fell by 14 per cent, originally less than provision than expected in polytechnics and colleges of higher education.

The greatest reduction among groups of countries by the ODA was 43 per cent from the Caribbean Community. Of individual countries, Mauritius sent less than half the numbers of a year earlier and Sri Lanka 46 per cent fewer.

Although the ODA points out that the 15 per cent decline registered by Gibraltar, whose students pay at the home rate, shows that not all the reduction is attributable to the rise in fees, the EEC figure stands out. Its 2,100 entrants in 1980-81 represented an 11 per cent increase.

Nigeria also sent 326 (or 12 per cent) more students, but Commonwealth countries as a group were down by a quarter.

The figures were produced for the Commons Select Committee on Foreign Affairs' overseas development sub-committee, which has also received a new submission from the United Kingdom Council on Overseas Students Affairs. Part of this graphically illustrates the drift away from Britain, listing visa applications for universities in Ontario. Applications from Mauritius show a four-fold increase.

The sub-committee is conducting a brief follow-up inquiry into the impact of full-cost fees. This week it heard evidence from the National Union of Students and the overseas Students Trust, whose representatives clashed over the suitability of the Trust to advise the Government on fees policy.

Mr David Aaronovitch, president of NUS, repeated the union's doubts about whether an organisation "set up to serve the needs of certain large companies" was the most appropriate to advise on Third World issues. But Mr Martin Kenyon, director of OST, told the committee that NUS had accepted £70,000 from the Trust over 10 years, financing its own adviser on overseas students from the money.

Mr Aaronovitch also told the MPs that the increased fees had produced a disproportionate number of wealthy foreign students, resulting in hostility among their British counterparts.

But a second letter will go to some 60 students pointing out course changes. Students would be offered a closely related course. The most extreme change would be in human communications likely to disappear, where a student would be offered an alternative single honours or combined honours course with common components of the old course. There could also be some amalgamation of engineering courses.

But it is unclear as to whether Aston is breaking a contract with potential students by the move and it is trying to seek clarification from the Universities Central Council on Admissions.

A university spokesman said: "I cannot comment on the legal situation at this stage."

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Huge fee rise scare at Birkbeck

by Ngaio Crequer

Birkbeck College, London, would have to raise its undergraduate fee by 270 per cent and postgraduate fee by 370 per cent to meet new University Grants Committee rules on part-time education.

Now an alliance of students and campus unions at the college, supported by Birkbeck professor of economic and social history, Eric Hobsbawm, and Frank Dobson, Labour MP for Holborn and St. Pancras South, are campaigning against the move.

President David Muddiman said: "If we charged the fees the UGC said there would be a change in the composition of people who come here, from those paying out of their own funds, the working class, to people like teachers who can get sponsorship."

The UGC has said that in allocating recurrent grant to universities it has assumed that fees for part-time

students are half those of full-time students. Although an institution could charge less than half the full-time fee, the UGC would assume the higher fee and reduce the university income accordingly.

Birkbeck, which provides degree-level teaching and research for mature students, currently charges £97 and £142 for undergraduate and postgraduate courses respectively. There are nearly 2,500 students in all.

The college governors were expected to pay. If Birkbeck charged what the UGC will assume it will charge, fees would have to go up to £360 and £660 respectively.

Mr Muddiman said: "Whatever we do, we are on to a loser. If we charge less, we lose income. If we charge what the UGC says, we lose students."

The college governors were expected to meet this week to decide what action to take. Next year's fee

levels are still undecided but are usually agreed during the summer.

At a stormy academic board meeting it was resolved to compromise and recommend an increase of 68 per cent for new students, making the fees £158 and £231 respectively. That recommendation will go to the college governors.

The students want the fees to be kept at their present levels, allowing for an inflationary rise of about 12 or 13 per cent. This is what continuing students will pay.

The UGC decision to impose a uniform pattern of part-time fees, by the backdoor method of assuming this in grant allocations, will have ramifications far beyond Birkbeck.

Fees for part-time students vary enormously throughout the country and many universities may now suffer reduced intakes at a time when they are trying to expand their provision for continuing education students.

UGC attacked for backing £15m school

by Robin McKie
Science Correspondent

The University Grants Committee has been accused by a Labour MP of behaving appallingly in backing a new £15m medical school building for London, while an alternative £1.8m renovation could also be carried out.

The attack, by Ronald Brown, MP for Hackney, South and Shoreditch, follows the recently published report of a working party led by Professor L.C. Gower, former vice-chancellor of Southampton University. The group was asked to cost the setting up of a new pre-clinical school for St Bartholomew's and London medical colleges.

It concluded that a new £15m building, to be sited near Queen Mary College (known as the BLQ scheme), was "clearly a better buy" than the alternative, a £1.8m extension

of Bart's present premises. "This is because it seems the UGC is the money for it out of its medical school fund," said Mr Brown.

Last week, London University's joint planning committee backed the report's conclusions and a decision was to be made this week by the university senate.

But during a Commons education debate, Mr Brown accused the UGC of behaving appallingly in authorising the £15m for construction of a new school.

Mr Brown urged the Secretary of State for Education, Mr Mark Carlisle, to stop the move. "It would be £13.2m to the universities that do much for our country rather than spending it on putting two pre-clinical schools on another site."

Kinnock questions UGC motives

by Ngaio Crequer

The University Grants Committee should change its constitution to counter charges of coincidence between the background of members and the incidence of cuts, Mr Neil Kinnock said last week.

Mr Kinnock, chief opposition education spokesman, said in a Commons debate on higher education that he wanted to discuss the role of the body which shattered university autonomy, but which was not subject to any public or Parliamentary scrutiny.

"To whom is the UGC accountable? Is it simply an agency of cuts, doing the bidding of a guilty Government? What are its functions of advice... Is the coincidence of gentle treatment of the universities from which UGC members come or at which they were educated merely a coincidence, or am I impugning the members of the UGC?"

Mr Kinnock was proposing a motion condemning the cuts, deploring the reduction of 20,000 places and noting with special concern the effect of the cuts on institutions making particular efforts to provide for the country's scientific and technological needs.

He said the Government's higher education policy was ruled by the theories of monetarism... economic theories that will burn the seed corn to gain a minute or two of heat. Last week (Mr Carlisle)... asked what point there was in students undertaking their education when there was no demand for them at the end. Perhaps it is time to ask what point there is in having a Secretary of State for Education and Science who has the ideology of a book burner...

He said that the universities of Salford, Aston, Bradford and others could demonstrate on any criterion - other than the "peculiar" one adopted by the Government and the UGC - that higher education could deliver the goods.

He warned too that some universities, faced with cuts, might look for the cheapest courses which would involve a shift away from the sciences towards the cheaper humanities.

Mr Mark Carlisle, moving an amendment welcoming the recommendations of the UGC, said the Government was not involved in the

reappraisal of the university system but a necessary reappraisal of provision. Even if the UGC's assumptions on numbers were realized, "we shall probably have by 1984-85 as many university places for home students as we had in the last full academic year when we had 1977-78." There were also today in the universities 7 per cent more overseas students than provided for by the funding policy of the previous Government.

He said the universities increased their places by 7,000 last year. "They cannot now be heard to say, having achieved what they said they could not achieve, that they expect the degree of drop the UGC implies."

Mr Edward Lyons, Lab (Bradford, West) asked whether it made sense to make cuts in a technological university such that all the science departments would be cut by 62 per cent, with 500 job losses. "That is killing a technological university and some departments are closing."

Sir Harold Wilson, Lab. (Huyton), chancellor of Bradford, said the Government policy would "smash" the university's oncology unit, which had saved the lives of people suffering from cancer.

Mr Robert Rhodes James, Con (Cambridge) said that he welcomed the UGC strategy. "... I have seen a remorseless decline in public support and interest in the universities. I can tell the vice chancellors... that they have more to worry about than the current proposals of the UGC."

Mr Ben Ford, Lab (Bradford, North) said that if the cuts were enforced Bradford would go £500,000 into debt, with the possibility that it would go bankrupt.

He said the UGC consisted of 20 people educated in eight universities. "It is obviously unrepresentative. It includes only one person with first-hand experience of a new technological university. It is time that a statutory body was formed with public accountability, including students and trade union representation. Alternatively the UGC could be abolished and universities could negotiate directly with ministers, he said."

The motion was lost by 230 votes to 272.

Universities get call of the sea

Seven universities are to benefit from an £8m grant made by the marine technology division of the Science and Engineering Research Council. The largest sum will go to Imperial College which is to receive £2.4m for a combined project on new offshore structure designs, a programme to be carried out in conjunction with University College, London.

Other awards are: £357,000 for Cranfield Institute of Technology to carry out research on materials and welding; £946,000 for Glasgow

University to do research on hydrodynamics, materials and offshore structures; £1.5m for a Heriot-Watt multi-disciplinary programme covering surface and underwater systems, environmental sciences and petroleum engineering; £265,000 for Newcastle to carry out marine transport, underwater engineering and seabed studies; £530,000 for Strathclyde to do underwater maintenance and inspection research; and £1.9m for Manchester, UMIST, Liverpool, Salford and Bangor universities to carry out a general marine research programme.

'Law should be changed to cover adult classes'

Local education authorities should have a legal duty to provide adult education, the conference resolved.

The union was instructed to campaign for adult and continuing education to be included in any changes in the 1944 Education Act arising from the Further Education Legal Basis report.

Ms Leisha Fullick (Inner London) said: "For too long we have lived with the at best naive, and at worst pernicious, argument that what adult education is about is merely non-vocational, merely recreational."

General secretary Ms Lucia Jones said that if local authorities were not required by law to provide adult education they would be encouraged to abandon their support for it altogether.

"The legislation as it stands provides no protection at all for adult education," she said. "This is quite clear when authorities like Humberside and Hampshire can suspend the service for months on end."

Charlotte Barry reports from the AACE conference in Liverpool

Parity campaign for part-timers

A national campaign to improve the pay and conditions of part-time teachers in adult education was launched last weekend by the Association of Adult and Continuing Education.

The union agreed at its annual conference in Liverpool to press for all part-time staff to be paid at the same rate as their full-time colleagues.

It also registered its disgust at the attempt by some local authorities to avoid implementing the national agreement covering part-time teachers reached in the Burnham Committee last year.

The demand for a "parity for part-timers" campaign was led by Mr John Cowley (Sheffield) who said that part-time teachers in adult education were the basis of the service but the most abused. He called for a drive to increase part-time membership of the association, which should campaign for work to be done by tutors without other full-time jobs.

The union's incoming president, Mr Andrew Watts (Inner London), the first part-timer to hold the post, told

Dr Rust and the lateral remedy

by Paul Flather

The ticklish tea-break problem, the specialist room syndrome, and the twilight hours shift system, all featured prominently in a wide-ranging blueprint to cut costs outlined by a London college principal at a conference last week.

Dr William Bonney Rust, principal of Hammersmith and West London College, told a conference on the economic use of resources set up by the London and Home Counties Regional Advisory Board, that great savings could be made if timetables and teaching routines were restructured.

The main task however, he told fellow principals and local authority officers in a well received paper, was to get teachers acclimatised to the idea of change.

"Teachers are very conservative," he said. "They don't like changing classrooms. They don't like changing students. They don't like changing subjects. The benefits can be great."

The trick he said was to use "positive oversight", managing a college, or similar education institution, with frequent reports and personal investigations into every major aspect of college life. "A bit of the de Bono lateral

thinking is required," he urged.

Under the specialist room syndrome, his first target, he pointed out that hundreds or even thousands of college rooms stood idle for long periods because they were earmarked for one purpose only. "If there are no music lessons on, use the music room for teaching, for goodness sake."

Next, principals should look at the number of hours actually taught. If all 160 teachers in an average college taught between 15 and 30 minutes a week below their allocation, the institution was losing 40 hours - or two full teaching posts - a week.

Then came relaxation time. In London this could amount to between 1 and 11 per cent of a teacher's time under a very generous local authority. "Surely there must be savings somewhere there?"

A quarter of an hour tea break in the morning and afternoon meant two and a half hours a week lost; and if taken out of work time would cost the Inner London Education Authority some £2m a year. "I am of course in favour of tea breaks - in the proper time and place. But there is a real difference in taking them during student contact time and other time. That is the ticklish

tea-break problem."

Dr Rust used a new shift system which made use of lunch-time and the twilight hours and broke down the 9-12 and 1-4 timetable. Under the new Rust formula four three-hour classes could be run each day by starting earlier and finishing later.

This would also allow three 30-hour week courses to be held in just two classrooms. Multiplied across the whole education system this would save billions of pounds in accommodation costs.

He urged principals not to "over-teach" students, and allow staff three hours a week to teach in fields of their own. A survey at Hammersmith and West London college turned up staff experts in wine-making, car maintenance, vegetable gardening, military history, post-Freudian developments, DIY and Indian culture.

He alluded only briefly to possible union opposition from the National Association of Teachers in Higher and Further Education. "I think Natfhe would find some of the proposals difficult. But not all. The new timetable for example is so open to logic that everyone should be convinced of its worth."

NUS opposes cash limits on grants

Student leaders are sceptical about suggestions that mandatory awards should be brought within the cash-limit system now applied to other university spending.

But they made clear their bitter opposition. "The present cuts, involving a loss of 20,000 places, bite deeply into the Robbins principle," a National Union of Students spokesman said. "But this would end the Robbins principle completely."

NUS officials said they would be surprised if such a radical move - which would mean qualified school leavers with a place on an approved course would lose their automatic right to a grant - were ever implemented.

The public accounts committee last week suggested to the Government that it should consider bringing at least spending on fees channelled through mandatory awards within cash limits.

"It does appear anomalous that the universities' income from direct grants should be cash-limited while the fee income that comes through student awards is not."

Noting that the Government was examining the possibility of more widespread cash-limiting, it said: "We trust that in the course of its review the Government will consider carefully whether all expenditure on student awards, or at least that part which relates to fees, should be brought within realistic cash limits."

In 1981-82 fees are expected to account for £350 million of the £835 million estimated for mandatory awards.

Delegates fight APT move for Burnham seat

The Association of Polytechnic Teachers is a small, elitist and unrepresentative body that should not be allowed a seat on the Burnham Committee, delegates were told.

This was a wrecking move aimed at fragmenting the employers' side of the table, said Ms Sandy Grant, an executive member of both AACE and the National Association of Teachers in Further and Higher Education. Industrial relations would be irreparably damaged by an organization hostile to the trade union movement in general and AACE and Natfhe in particular.

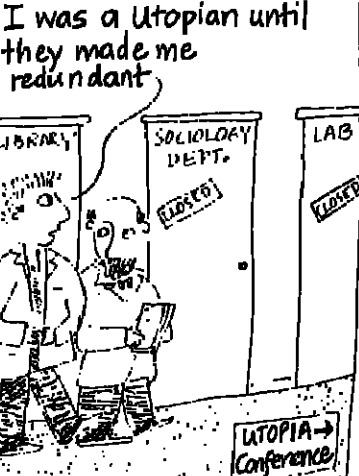
An emergency resolution supporting Natfhe's determination not to sit down with the APT and calling on Education Secretary Mr Mark Carlisle not to give it a seat was accepted unanimously.

Mr Rod Sawyer (Yorkshire and Humberside) said: "Any form of encouragement of APT must be absolutely fought. It's an organization which I feel will be ultimately and totally divisive."

In defence of the negotiating team, Ms Jones said they had not appreciated at the time how badly they would be treated by the authorities. "Maybe to some extent we were naive," she said

Utopian days are here again...

by Paul Flather



Utopianism, which last flourished in the 19th century, is making a determined comeback thanks to the optimism of the 1960s and the industrial depression of the 1970s.

Professor Lyman Tower Sargent, professor of political science at Missouri University, St. Louis and one of the leaders of the revival, puts it mostly down to the 60s spirit.

"That's when it really started. And people just don't realize that mood has never really stopped," he said after giving a paper at a Utopian thought conference in London.

"I don't know large numbers of academics have got interested in this field in the past 10 years. Large numbers of these are being written up on this. It's very exciting." The professor agreed on explaining that students of the 60s were now becoming

eminent academics of the 80s. An expert on the work of Mannheim, he plans books on British and American utopians.

Industrial decay is another explanation, according to Mr Keith Taylor, senior lecturer in politics and history at Coventry Polytechnic. He set up a Utopian thought study group in 1978, and organized the London conference.

"Britain saturated in its traditions of pragmatism and science is not conducive to this kind of thinking, unlike say America and France. But at present things are so bad we must build a qualitatively new ideal for the future."

Mr Taylor believes the current ravages of inner cities will boost Utopianism among academics, as a philosophical demonstration of both what is wrong with the present, and how to change to a better future. He plans another conference in November.

Poly extends industrial links

New links with local industry are being forged by Sheffield City Polytechnic with the establishment of a department of external liaison and development services.

It will organize short courses for industry and advise on microprocessors, the use of specialist equipment and research and consultancy work.

The new department will encourage the use of specialist units like the automation advisory service and be responsible for arranging work experience for sandwich course students. It will be headed by Mr Brian Jeram, former development planner in the British Steel Corporation in Sheffield.

Another development is the formation of the Higher Education Accommodation Consortium to market polytechnic and college residential facilities for conferences and holidays. Colleges and polytechnics on the register will jointly fund the Sheffield central office which will complement the existing university consortium.

Tutors worried by shortage of sandwich-course sponsors

by Owen Surridge

A shortage of industrial sponsors is causing sleepless nights for some sandwich course tutors in the polytechnics. But the picture nationally is mixed and apparently without pattern, a conference last week showed.

At the meeting of business studies teachers held at the City of London Polytechnic a delegate from Croydon was sombre in his complaint of difficult times - "the worst we have ever had," while another from Liverpool said he had no problem in finding places.

Things look good in Coventry, for this year at least, and not so good in Derby where 30 per cent of sandwich course students have still to find places. Nottingham reported no trouble in placing 350 students, a story echoed by Crawley, albeit with only a tenth the number of students. Everybody present recognized, though, that placement difficulties were likely to increase over the next two years.

The extent to which polytechnics were affected by local industrial recession seems to depend on the breadth of their contacts in other parts of the country; those with the largest nets catch the most fish.

So far as the ultimate employment of graduates is concerned, Tom Bourner, of Brighton Polytechnic, told the conference: "Over 80 per cent of business studies graduates get jobs in industry during the year in which they graduated." Most of the rest went into research or higher education. Only a handful remained unemployed at the year end, compared with a very much higher percentage of students from other disciplines, about 50 per cent of whom were likely to be still out of work by that time.

Sandwich course students were better at job-finding than full-time students, he claimed and there was a marked difference in destination between graduates at polytechnics and of universities. Those from the polytechnics usually went into industry, often manufacturing, while those from universities went predominantly into commerce or accountancy.

'Don't scrap the YOP unless there's a better alternative'

by Patricia Santinelli

The Youth Opportunities Programme could be scrapped provided it is replaced by something better, Mr Geoffrey Holland, director of the Manpower Services Commission Special Programme Division said this week.

He told a Youth aid conference that he was for YOP but did not believe that it must survive in its present form at all costs.

"I don't care if it is scrapped," he said. "I care about the young people involved and if YOP is going to be scrapped then we must see that something better is put in its place."

Mr Holland was replying to recent criticisms of the programme which has provided education and training for hundreds of thousands of young

people since its start in 1978 but which is now being described by some as sick and dying.

But he refused to comment on a plan by Mr James Prior, the Secretary of State for Employment, for a new YOP which would take 400,000 school leavers on a year long program of unemployment at a cost of some £600 m.

Mr Holland said that since YOP started it had taken on 850,000 young people. In the first three months of this financial year, 100,000 unemployed young people had joined, as opposed to 55,000 the previous year. Moreover, 2,000 new sponsors were coming forward each week and 4,000 new opportunities were approved every week.

YOP was the only alternative to the dole for unemployed teenagers and no one else was offering the same kind of undertaking. "It is the only programme we have and therefore we should not pull it out by the roots, but try and develop it into something else and the name of the game is quality," Mr Holland said.

"We need to be extremely concerned with quality. For YOP is no longer a minority programme with one in two school leavers now entering it - it is no longer a short shot in the arm - the length of stay has increased to six months and will become even longer."

He warned that there was no magic wand which would transform the ugly duckling into a swan overnight as some politicians appeared to

believe. In the next two years increasing unemployment might demand measures beyond the Government's means.

Mr Geoffrey Melling, an ILEA member, said that the ILEA had made a plea to prevent the further education provision - YOP and other courses - which provided for a large number of youngsters from whom traditional FE is no longer becoming an educational ghetto.

He said we were seeing the growth of a philosophy to inform and control the construction of programmes and the way they were taught to new clientele, but we were not seeing a coherent programme of 19 education and training which would allow accreditation to the new FE.

John Co. 1516

Appeals for college funds are running at twice last year's rate following Reagan's budget cuts

Businesses bombarded with begging letters . . .

from Clive Cookson

WASHINGTON Taking the Reaganite message to heart, universities and other non-profit organizations are bombarding American business with requests for funds to make up for some of the federal funds they expect to lose as a result of the administration's budget cuts.

Informal surveys show that large companies are receiving between a quarter and a third more appeals this year than in 1980, and begging letters are flowing into a few firms at twice last year's rate.

The appeals come from the whole range of non-profit organizations. Colleges and universities were given a total of \$696m by American companies in 1979/80 - about one third of all corporate donations - and they are prominent among the groups soliciting extra funds this year, as are cultural and artistic outfits and private health and welfare agencies.

The Reagan administration has been saying that the private sector can make up the support withdrawn by the government for activities ranging from the arts and humanities to social research. But others point

out that that is true only to a very limited extent.

In a recent study the Urban Institute, an independent research group in Washington, estimated that private donations to non-profit organizations would have to rise by 144 per cent between 1980 and 1984 to replace all the Reagan administration's budget cuts and keep up with inflation - an impossible target. Over the previous five years private donations increased by only 38 per cent.

Non-profit organizations total direct loss of federal funding during the period 1980-84 was put at \$27 billion by the Urban Institute. The actual impact of the cuts could be even greater, according to independent Sector the lobby group that commissioned the study. Secondary effects will make matters worse: local and state governments whose own budgets are being squeezed by Washington may reduce support; and the demand for the services of non-profit organizations is likely to increase.

Looking specifically at higher education, Hayden Smith, vice-president of the Council for Financial Aid to Education, confirmed an

"upsurge" of appeals by universities for corporate funds this year, though he could not put a percentage figure on it.

Two months ago the council reported that corporate gifts to colleges and universities jumped by an astonishing 25 per cent during the academic year 1979/80, to \$696m. But Mr Smith characterized that increase as a freak.

Preliminary figures indicate an increase between 10 and 15 per cent for 1980/81. And Mr Smith predicts that companies will go on raising their contributions to higher education at about that rate over the next few years. In real terms, he expects annual increases of two or three per cent above inflation.

American law allows companies to give away up to five per cent of their net income tax-free, but very few are generous. The average level of charitable giving among large corporations is close to one per cent of taxable income.

Most professional fund-raisers expect that per centage to rise slowly in the years ahead. "It's an article of faith around here," said Mr Smith. But growth will be far too slow to

offset the decline in federal funds.

The Council for Financial Aid to Education - the main liaison organization between colleges and universities and corporate treasurers - takes a dim view of institutions which respond to financial adversity, or the fear of future adversity, by bombarding a large number of companies with appeals.

The recommended policy is to choose a relatively small number of firms which will feel some sort of affinity with the university - they might be based in the same city; or recruit a significant number of its graduates; or conduct business in areas where its research might come in useful; or have several alumni on the board of directors - and carefully woo them into a long-term relationship.

Conversely, the council advises companies to adopt what Mr Smith calls a "pro-active" style of giving money to higher education. That is the opposite of a "reactive policy," in which the firm sits back, waits for the appeals to pour in and responds to each request on its merits.

Under the favoured pro-active policy, the company takes the initiative.

The firm decides exactly what it wants to gain from its donations, carefully plans a programme of contributions to certain selected institutions on a long-term basis.

As Mr Smith points out, let corporations do not give me good. Gifts are made because the company is better off in the long run in some relevant sense if it does.

How dependent is American higher education on companies? The \$696m they gave in 1979/80 constituted a record 18 per cent of total voluntary support for colleges and universities.

The other categories of aid were:

- Foundations which gave 18.34 per cent of the total.
- Private individuals who contributed \$1,757m (46 per cent) out of half of the total came from former students.
- Religious denominations gave \$155m (four per cent).

Bill to stem 'scandalous' ignorance of languages

from our North American editor

It may sound crazy to propose a significant new federal commitment to education at a time when congress and the administration are competing to cut away existing programmes.

But that is what Representative Paul Simon - who is chairman of the House sub-committee on post-secondary education and one of the sanest members of Congress - is trying to achieve with a Bill to promote language teaching in the United States.

The Bill, which has picked up 30 co-sponsors in the House of Representatives, would implement some of the recommendations of President Carter's commission on foreign language and international studies. Mr Simon, a Democrat from Illinois, served on the commission, which reported in November 1979 that "Americans incompetence in foreign languages is nothing short of scandalous and it is becoming worse." And he is determined that its recommendations for improvement should not lie forgotten on the shelf like so many other government reports.

Both elementary, secondary and higher education would be given incentives to beef up language teaching in Mr Simon's Bill with colleges and universities getting the largest financial inducements.

Two types of per-capita grants are proposed:

- A college or university would receive money according to the number of students taking language courses. The sums envisaged are \$30 per student in the first or second year of language study and \$40 per student enrolled in what the secretary of

education determines to be less commonly taught language courses. For example, Arabic, Chinese and Japanese. However, an institution would not be eligible for any money unless at least five per cent of its students were learning foreign languages.

In order to encourage colleges and universities to include language proficiency as a graduation re-

quirement, an institution that makes all students study a foreign language for two years would be given \$30 per student - this grant would be based on total enrollment and not just on the number studying languages. Mr Simon is distressed by the fact that United

States is the only major industrial country whose students can pass right through the educational system, from primary school to university, without studying a foreign language even for a year.

The bill would authorize the expenditure of \$13m a year for the first part and \$60m a year for the second part of the programme. At the elementary and secondary levels, a more modest \$7m would be made available for States to develop model language teaching programmes in selected schools.

Mr Simon, a former newspaper editor and writer, insisted in an interview that his bill does stand a chance of getting through this Congress (which finishes at the end of 1982), despite the desire of most members to cut federal education programmes. "I include the words 'national security' in the title of the Bill," he explained, "and there is willingness to spend money in that area."

Several Republicans as well as Democratic members of Mr Simon's post-secondary education sub-committee have joined him in sponsoring the bill, and he seems confident that the legislation will emerge successfully from the sub-committee and then from the full education and labour committee in the House. The sub-committee was due to begin hearings on the Bill this week, and witnesses from business, the academic community and - very importantly - the armed forces were lined up to testify to the need for Americans to improve their language skills for the sake of the country's economic health and national defence.

The big question is whether any-

one will be prepared to shepherd a companion bill through the Republican-controlled Senate. The most obvious candidate is Robert Stafford, a relatively liberal Republican who chairs the Senate education sub-committee. He has shown interest in the legislation and is sympathetic to its intentions, according to members of Mr Simon's staff.

However Glenn Gershenson, an aid to Mr Stafford, said members of the senate sub-committee were extremely unlikely to do anything about it this year.

Last week Mr Simon and five other congressmen interested in education returned from a study trip to the Soviet Union. One of their principal purposes was to look at language training in Russia, and they came back even more convinced of the need for the United States to upgrade the linguistic skills of its people for the sake of national security.

The delegation was the first group of American congressmen to visit Moscow since the United States froze educational, cultural and scientific relations in response to the Soviet invasion of Afghanistan. Members reported that the Soviet officials they met - including education minister Mikhail Prokhorov and higher education minister Vyacheslav Yegorin - were very anxious for exchanges to be resumed.

Mr Simon said he had consistently opposed the cutting of educational links between the Soviet Union and the United States and now hoped they would be restored "in the best interests of both our countries."



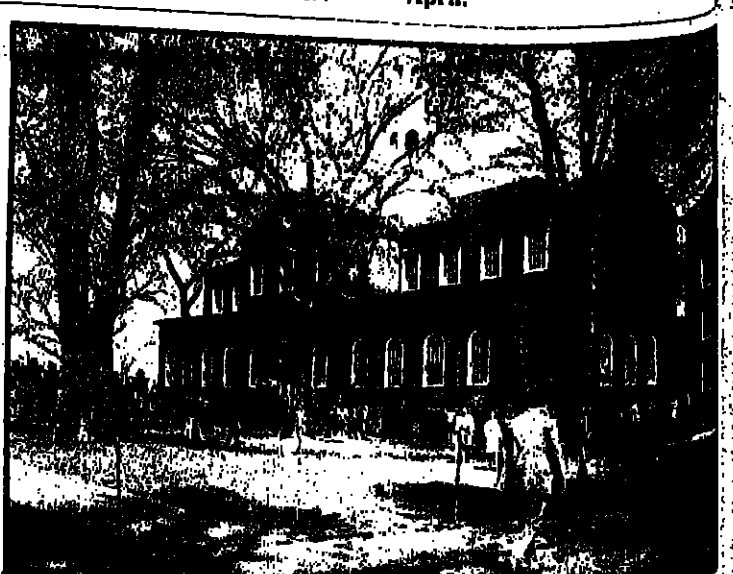
Moonscape painter

Astronaut Alan Bean, (second from left) set foot on the moon, has resigned from the National Aeronautics and Space Administration (NASA) to become a full-time painter.

Mr Bean, who is 49 and has been a member of the NASA astronaut corps since 1963, was lunar module pilot on Apollo 12, the second moon-landing mission in 1969. Then he commanded the second Skylab flight in 1973.

According to a NASA statement, Mr Bean "visited worlds and he brought back a new perspective on the first hand, and he hopes to express these experiences through the medium of art."

Now only one of the 12 astronauts who have walked on the moon, he is the astronaut corps' chief of the astronaut office and commander of the first space shuttle flight in April.



The famous Harvard yard: visitors to the university spent \$4m during 1979/80.

Harvard: \$106m money spinner

Harvard University adds \$106m a year to the economy of Cambridge, the city in which it is located.

That is the conclusion of an unusual "economy impact" study conducted for the university by a local accounting firm.

It is a follow-up to an earlier study, released last year, which found that Harvard benefits the state economy of Massachusetts by \$380m and creates, directly and indirectly, more than 20,000 jobs. Altogether, the 79 independent institutions of

higher education in Massachusetts added \$2.3 billion and 130,000 jobs to the state's economy in 1978/79.

The new survey, undertaken by the Cambridge firm of Putnam, Hayes and Bartlett, calculated the impact both of direct spending by the university and its students and employees and of the indirect "multiplier" effect of that money as it passes through different parts.

A breakdown between different categories of expenditure showed that during the academic year 1979/80:

- The 20,000 Harvard students spent nearly \$12m in Cambridge, which produced \$20.3m in spending as a result of the multiplier effect.
- Staff and faculty members spent more than \$18m of their after-tax wages and salaries in the city, resulting in \$31.4m economic impact.
- Employees of businesses attracted to Cambridge by the presence of

the university spent \$8m (\$13.3m total impact).

- Visitors to the university spent \$4m (\$7m total impact).
- Harvard's direct purchase of goods and services from local firms came to \$19.6m (\$33.9m total impact).

The university made the most of the study's public relations potential. "While it is generally acknowledged that universities such as Harvard provide enormous educational and cultural benefits to the community, the extent of the positive economic impact of universities is not as widely recognized," said Robin Schmidt, vice-president for government and community affairs. "In fact Harvard's economic contribution has often been questioned. The Cambridge study and the others that preceded it provide solid documentation of the importance of Harvard and other colleges and universities to the economy."

Overseas news

University of the Air for Japan

from Martin Roth

TOKYO Japan's Parliament has passed a bill to establish the country's first "university of the air," modelled partially on Britain's Open University. The Education Ministry now hopes to offer the first courses in 1984.

However, passage of the legislation was attended with controversy, and there is no guarantee that the university will start up on schedule.

The idea of such an institution was conceived in the late 1960s at the height of student revolts.

It appealed to many politicians of the ruling Liberal Democratic Party, who believed that a university without a campus would be free of student uprisings, and they urged the Education Ministry to bring it about.

The ministry's plan calls for courses and the teaching staff to be selected by the chairman of the university's trustee board, who will be a Government appointee. Teachers will have tenure for only five years, not for life as at other state universities.

Thus the new Bill was opposed by many opposition legislators, including those of the Socialist and Communist parties, on the ground that the university is not self-governing and the Government could exercise political control over staff and courses.

The university has also recently come under fire from some Government politicians who say that it is too expensive, and should not be created at a time when the Japanese Government, like many governments in the West, is trying to implement public spending cuts.

The current start-up cost of the institution is expected to be around 110,000m yen (£250m), plus annual operating costs of about 36,000m yen (£82m).

A bachelor's course will take a minimum of four years, though only about 40 per cent of the students are expected to graduate, with most of the others studying just for interest.

Lectures will be given over radio and television, with these expected to play a far more important role than they do for Britain's Open University.

A ministry survey in 1975 estimated that 6.2 million people throughout Japan would be interested in enrolling at the university, far more than can ever be accommodated. Indeed, it is expected that no more than 30,000 a year will be permitted, with applications accepted on a first-come-first-served basis.

The university will have just one school, the faculty of culture, with courses in science, industry and humanities.

Fraser names 'excellence' centre' team

from Geoff Maslen

MELBOURNE The Australian Government has appointed a shop-keeper, a businessman and an academic to make recommendations on the location of centres of excellence in a number of Australian universities.

The Prime Minister, Mr Malcolm Fraser, announced what he called at the time a "major new initiative" in his policy speech before the last elections in 1980 and committed \$16m to establishing the centres up to 1984.

According to a recent announcement by the Minister for Education, Mr Fife, the research centres of excellence will be special units in Australian universities or in other places by arrangement with them, where "research of outstanding quality can occur within an international context likely to lead to a significant major development of knowledge."

Mr Fife said the centres of excellence would be led by a chief researcher, recognized internationally as eminent in his intellectual discipline, currently active in the centre's particular area of research, and able to maintain his commitment for as long as the programme runs.

Under the Government's guidelines, centres can be set up in any university, except the Institute of Advanced Studies at the Australian National University. One university may cooperate with another university or non-university institution to propose a centre. The guidelines limit the number of grants to be made available to "enable a concentration of effort and to achieve a high degree of excellence."

The money made available will be used for salaries, equipment, support service and possibly capital works, and will be for a period of up to six years.

The members appointed to recommend on the centres are the chairman of a large Australian shopping chain, a Perth businessman, and the chairman of the universities council of the tertiary education commission, Professor D. N. Dunbar.

Protest by students over staff cuts

from James Hutchinson

BONN

The 150th birthday celebrations of Hanover University prompted a demonstration by students over staff cuts and against a ban on further building projects. The Government of Lower Saxony has decided that only those university extensions started before December 1 last year will be completed, even though overrunning is so acute that many students have to sit on the floor during lectures.

Last year the teaching staff was reduced by five, and still more stringent economies on staffing are planned in the 1982 budget. Hardest hit are the arts and social sciences - departments set up in 1968 when the university, formerly a technical college, was expanded. Cuts in university spending throughout the state will reduce capacity at a time when the number of students continues to increase. Even so, the State Government was prepared to spend nearly £500,000 on renovations to the main building of Hanover University where the birthday celebrations were held.

Students and teachers are also protesting against the continued suspension of Professor Peter Brückner who some years ago published a controversial analysis of the causes of terrorism. A psychologist, Mr. Brückner appeared to sympathize with a student who had expressed feelings of "secret joy" at the news that the West German federal prosecutor had been murdered by terrorists.

Mr. Brückner was cleared by a disciplinary tribunal, but has not yet been re-instated by the Government of Lower Saxony, although the ban on his entering university premises has been lifted.

Afrikaans rebels re-assert principles of founders

from Craig Charney

JOHANNESBURG Embattled but determined, the Afrikaans student group Poltu held its first annual congress in Pretoria from July 7 to July 10.

The group proclaimed the liberal principles of its founders, despite some hesitations, and began laying plans to popularize them on Afrikaans language campuses. It also marked the beginning of potentially significant contacts between traditionally conservative Afrikaans students and black students and political leaders.

Poltu was formed last year in response to a conservative takeover of the Afrikaans student bond, which represents most university students from the dominant Afrikaans-speaking ethnic group. After a trying year, it has acquired 500 members, including the chairmen of three university student councils.

While Poltu was met with a warm reception on some campuses, its speakers encountered jeers and rotten eggs at others. At Potchefstroom University, the administration banned Poltu meetings on campus.

Just a week before the congress, Pretoria University refused to host it. But the organisers moved the conference to a hotel. Some 150 delegates came, along with English-speaking and black student representatives.

At this congress, resolutions were passed condemning the South African Government's policy of declaring all blacks citizens of impoverished Bantustans, and demanding equal South African citizenship for all, black and white.

The group re-elected Mr Pieter Fourie of Potchefstroom as chairman, and chose Mr Francois Du Bois of Stellenbosch University as vice-chairman.

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TAI

Some APT reminders on representation

Leaders of the Association of Polytechnic Teachers can be forgiven for thinking they have fallen victim to persecution mania. Not only has there been the expected opposition to their seat on the Burnham further education committee from the already-recognized trade unions. It has come from the management side as well.

Demands have been made by the main lecturers' union for meetings not only with Secretary of State Mr Mark Carlisle but with Prime Minister Mrs Margaret Thatcher too.

While there was no official confirmation, informed sources said that the union was also asking the TUC to intervene at the highest possible level to try to convince Mr Carlisle of the error of his intended way.

Add to this the publicity given to warnings from the National Association of Teachers in Further and Higher Education that they would boycott Burnham if APT was recognized and the recipe for paranoia was complete.

They believe they are pursuing a major point of principle - that polytechnic staff should have the right to choose which trade union represents them in collective bargaining, and that they should be given the chance to have their voice heard on the national pay bargaining machinery.

Ranged against them are objections based more on the likely practical consequences than on principle.

"The main plank of our case is natural justice", APT's national secretary Dr Tony Poinson, says. "The question of practicalities

which has been raised is merely seeking for arguments to persuade people not to accept that very important principle."

The major fear expressed about APT's extra seat is that it will destabilize the negotiating machinery and inhibit the process of reaching agreements.

But Dr Poinson rejects this view: "There is no evidence that the procedure works effectively. The only two occasions when the polytechnics have done well has been when collective bargaining has been set aside - with Houghton in 1975 and Clegg last year - while at other times we have fared very badly. Inclusion of APT could not make it any worse than it is at present for polytechnic staff."

"It may make it more difficult to ignore the needs of polytechnic lecturers."

He dismissed Natfhe's warning not to negotiate in APT's presence as an attempt to "frighten people into not accepting the principle."

A further objection is to the proliferation of trade unions when there appears to be a general consensus that fewer and larger means better. But APT points out that three tiny unions are already represented on Burnham. They are the Association

David Jobbins on the Association of Polytechnic Teachers and its campaign to become accepted as part of the national pay bargaining machinery.

of Agricultural Education Staffs (1000 members), the Association of College Principals (500 members) and the National Society for Art Education with members spanning the entire education spectrum.

Natfhe argues that these smaller unions represent the "totality" of members in their specialized fields, that polytechnic teachers are part of the teaching force in public sector higher education along with lecturers in the Institutes of higher education and other colleges, that they are already represented by Natfhe.

It is APT's challenge to this claim which forms basis of their case. On the particular point that polytechnic staff are and should continue to be represented exclusively by Natfhe, Dr Poinson comments: "This is the same argument used by one-party Governments in totalitarian states over the years. The Communist Party in Russia would use the same argument that people can be represented through the Party and that there is no need for an opposition."

Natfhe is understandably sensitive about suggestions that it has failed to represent the views of its polytechnic members. It emphasizes that five out of its 12 seats on Burnham are held by polytechnic lecturers, as in the chairman of the teachers' panel.

Continued refusals of national recognition led APT to pursue the long slog of trying to secure local agreements at each polytechnic. The

results have been patchy and uncertain, with the definition of recognition varying widely. With the exception of Northern Ireland, where the two unions cooperated in securing an equal but separate negotiating status, APT and Natfhe have been at daggers' point throughout.

The Local authority association have hitherto detached themselves from the struggle, telling the Secretary of State that membership of their teachers' panel was none of their business and advising local authorities not to recognize APT unless and until a decision at national level was made.

Privately Natfhe officials concede that irrespective of the effects at national level, a Burnham seat would unleash a flood of local recognition agreements from sympathetic education authorities.

It is little wonder that they have resorted to a programme of resistance which looks a little like overkill, and to those observers who wonder what difference a single seat could make like using a sledge hammer to crack a nut. They also accept belatedly that they have been outmanoeuvred by APT who skillfully pursued a Parliamentary campaign on the question of principle at stake.

THE ASSOCIATION OF POLYTECHNIC TEACHERS

MEMBERSHIP: 1980 return to the certification officer 2,232 of these 2,982 are in England and Wales, with about 2,750 covered by the Burnham further education committee.

STRUCTURE: A federation of 31 local associations based at all polytechnics, including the 26 where staff are directly covered by Burnham agreements. Supreme policy-making body is the national council which meets three times a year, with local associations sending delegates in proportion to membership. Officers including secretary and senior vice-chairman (who becomes chairman the following year) are elected annually by council. Affiliated to the Managerial, Professional and Staff Liaison Group, of which it was a founder member.

HISTORY: Formed in 1973, became a certificated trade union in 1974. Membership figures have shown a slow growth, now staff in public sector higher education. First applied for Burnham membership in 1974 and rejected by a series of Secretaries of State including Mr Reg Prentice, Mr Fred Mulley, Mrs Shirley Williams, and Mrs Margaret Thatcher.

aided by the maladroitness of the now dead closed shop agreement at Leeds.

What antagonizes the major union is the representation of its case as "lecturers are free to join whatever union they wish," one national official said. "What is at stake is the future of Burnham."

A decision by the Secretary of State to refuse the seat for APT after announcing he was minded to grant one would, in the constrained world of Burnham, make history. A previous minister has ever extended decision on membership after receiving representations from the existing members of the committee.

APT has however been making plans for its new role on the assumption that the decision would be confirmed. It expects its casework to continue much as before, but to secure extra office space and expand its research staff from the autumn. The decision is favourable. It has pegged its £15 subscription rate, January 1982 on the assumption that recognition would attract sufficient influx of new members to boost income.

The question of expert advice raised by Natfhe last week. Key officials were sceptical that it could offer the same level of service to members that Natfhe's officials provide. By contrast, it seems to want to aim to an "amateur" status by drawing on a fund of expertise on the law, industrial relations, pensions and questions among its lay members rather than expand its staff.

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MEMBERSHIP: 1980 return to the certification officer 2,232 of these 2,982 are in England and Wales, with about 2,750 covered by the Burnham further education committee.

STRUCTURE: A federation of 31 local associations based at all polytechnics, including the 26 where staff are directly covered by Burnham agreements. Supreme policy-making body is the national council which meets three times a year, with local associations sending delegates in proportion to membership. Officers including secretary and senior vice-chairman (who becomes chairman the following year) are elected annually by council. Affiliated to the Managerial, Professional and Staff Liaison Group, of which it was a founder member.

HISTORY: Formed in 1973, became a certificated trade union in 1974. Membership figures have shown a slow growth, now staff in public sector higher education. First applied for Burnham membership in 1974 and rejected by a series of Secretaries of State including Mr Reg Prentice, Mr Fred Mulley, Mrs Shirley Williams, and Mrs Margaret Thatcher.



Inner turmoil

Peter David asks if social scientists will be able to command any greater respect for their work in the wake of recent rioting

inner city in its temporal, spatial, socio-economic context."

Derek Diamond of the London School of Economics directed the research programme and 11 extensive literature reviews of inner city research were carried out and published by the SSRC. A book by Peter Hall, summarizing the findings, is to be published later this month.

The SSRC working party became convinced that the tendency of academics and governments to focus on the inner cities as a narrowly defined problem has been a mistake. "The label 'inner city problem' is really a most misleading cliché," says Diamond. "Deprivation is not found just in the inner cities, nor is unemployment, nor is housing stress. To speak of these as inner city problems is an oversimplification which has led both Labour and Conservative governments to be over-concerned with policies based on spatial designations."

If the planners are serious about their reappraisal it could have far-reaching implications. Over the past 20 years the views of academics have become increasingly influential. The inner area studies commissioned by the Department of the Environment drew heavily on new orientations in academic research in cities which concentrated attention on the migration of industries and populations. The studies had a direct impact on the Inner Urban Areas Act in 1978 and its associated policies of regeneration. The inner city economy through the industrial development strategy and manipulations of local government grant.

Before 1972, political hunch rather than intellectual fashion was the main source of inspiration for inner

area policies, but even then civil servants and politicians borrowed freely from the social sciences. Keith Joseph's transmitted deprivation thesis leaned on the culture of poverty notion pioneered by Oscar Lewis in the United States - although that theory was being comprehensively debunked when Sir Keith was discovering it.

However, it is the approach of the inner area studies which is now being criticized by many planners. The inner city working party's new thesis is that research strategies and government intervention must be directed to a much wider area than encompassed by the inner cities. Analysis beamed in narrowly on the afflicted areas will explain little and policies based on it will cure less. The SSRC has accepted the view of the working party and is earmarking more than £250,000 to a radical new package of research which will emphasize interlocking economic and social phenomena.

So a government ready to buy a research portfolio in the wake of the riots will find planners and geographers in no mood to channel their work into the areas affected. Their preferred research packages would look at the way local labour markets are influenced by the investment strategies of big industries. They intend also to attempt middle range forecasting on particular problems - what effect would the collapse of Leyland have on Coventry and Birmingham, for example?

Little on the shelf there for a government seeking instant prognosis. But there are other features of the social sciences in Britain, which will also make it difficult for social scientists to help politicians deal with

the new crisis. One of these is the chronic lack of contact between the planners on the one hand and on the other the sociologists who have done most work on race, crime and young people.

Planners and sociologists have always had a prickly relationship. In a book in 1973, the planner David Everisty complained that British sociologists had roundly condemned just about everything that had been done since the war to provide a better environment.

"They do not like new towns, they do not like peripheral estates, they like neither segregation of social classes nor mixtures, they condemn the monotony of terraces as they do the tower blocks, they have judged privacy unnecessary and open plan housing to be antisocial."

Everisty's was a bad-tempered caricature, but the lack of understanding between the disciplines is very real. Diamond, for example, admits that the inner cities working party was unable to say anything useful about urban violence. A seminar on the subject brought together criminologists, experts on race and the media. "From our point of view, though it was a failure. There was just nothing we could pull out and say, yes this is an inner city problem."

Even more telling was the absence from the working party of John Rex, Britain's leading race sociologist and director of the SSRC's own research unit on ethnic relations. Rex openly derides the failure of the "inner city people" to deal with the ethnic dimension of the problem. Nor is he impressed with much existing British race relations sociology, which he claims has been co-opted on the one hand by ideologists promoting the "black cause", and on the other by those determined to foster integration.

It is within sociology, though, that a great deal of the most relevant work on urban violence has been done. The so-called "new criminology", produced by academics aligned to the National Deviancy Conference in the early 1970s was one example. A corpus of work, including impressive field studies, examined the political content of apparently meaningless crime and traced the complicity

of interactions of police, young people and the media.

Much of the work of this period tried to make the seemingly inexplicable eruptions of street crime easier to understand. In 1978 an important book, which in the light of recent events looks almost prophetic, was produced by Birmingham University's Centre for Contemporary Cultural Studies - the centre established by Richard Hoggart. In contrast to Hoggart's portrayal in *Uses of Literacy* of solid working class community life, the new book, *Policing the Crisis*, examined the increase in mugging and showed how the political and cultural frustrations of black people were likely to find expression in apparently purposeless acts of violence.

There has also been a proliferation of sociological studies of youth culture, ranging from Simon Frith's work on the role of popular music to studies of skinheads, Rastafarians and street gangs. Last year a study of the black community in St Paul's, Bristol, was published by the sociologist Ken Pryce. St Paul's was the scene of the first of the recent spates of street rioting.

It would, therefore, be nice to think that Texteth, Brixton, and Moss Side will offer social science an opportunity to redeem itself, rehabilitate its political credibility and establish its "relevance" once and for all. But such an outcome is unlikely for at least two reasons. One is the lack of contact within social science between the disciplines which can bear on the present riots but which, individually, do not offer a coherent diagnosis or prescription.

The other reason, perhaps in the long run the more decisive, is that all the disciplines - even planning which for so long captured the high ground of political influence - have stopped offering manageable reformist panaceas. The planners despair of improving conditions in the inner cities without massive changes in the structure of our industries and labour markets. And the sociologists, whose work touches most directly on the springs of urban violence, are returning to the notions of alienation and social collapse which are anathema to governments looking for practical solutions.

Will the real mature student please stand up

Just what sort of person takes up adult education? Charlotte Barry reports from the annual meeting of the Standing Conference on University Teaching and Research in the Education of Adults

Mr Tim Bilham, of Sheffield University's division of continuing education, presented preliminary findings of his research on mature undergraduates in British universities between 1974 and 1978.

It shows that total applications by mature students to undergraduate courses increased by a third during that period compared to 19 per cent for all students. It is also clear that while applications from mature men rose by five per cent in 1977/79, those from women increased by nearly a quarter.

Mr Bilham put forward three possible explanations for this. "There has been a general increased awareness for the need for education, particularly continuing education opportunities," he said. "Vocational qualifications are becoming more necessary and there has been a general increase of demand for equal opportunities for women."

His research confirmed that about 60 per cent of mature students go into the arts and social sciences. However, in all subject areas except engineering candidates under 21 have a greater chance of being accepted for university.

Medicine shows the lowest value (40 per cent success rate for under 21s and 18 per cent for mature students) while sciences have the highest value (77 per cent and 63 per cent success rate).

Regarding entrance qualifications,

Mr Bilham's findings show that a third of mature students enter university with three A levels and a quarter with two. Nearly 20 per cent enter with other qualifications such as teacher training and Open University credits. The next largest group is those with ONC/OND and HNC/HND qualifications, most of whom are men.

Not only do mature students have fewer A levels, but their grades are lower. In spite of this, with the exception of medicine and engineering, mature students seem to do as well in their final exams, adding weight to the argument that A levels are a poor predictor of their success.

The fact that most mature students at university do enter with "normal" qualifications goes some way towards explaining why only 7,000 out of the 83,000 students accepted for university in 1979 were over 21. It is obvious that more flexible entrance procedures, more imaginative teaching programmes and more generous grant facilities are needed if circumstances are to improve.

Other papers given in the workshop sessions at the conference demonstrated the isolated efforts being made by individual universities to provide alternative methods of entry to degree courses for mature students.

These ranged from introductory courses at Sheffield and Glasgow to the little known 60-year-old scheme run by the Joint Matriculation Board (in conjunction with the universities to Birmingham, Liverpool, Leeds,

Manchester and Sheffield) which has saved adults many years of study by CIE examinations.

Another major area of concern was the funding of adult education research topics. Professor Michael Stephens, director of Nottingham University's adult education department, considered adult education research to have taken off in the 1970s after years of atrophy.

"This was due in part to the support provided by the appointment of lecturers in the theory and practice of adult education on certificate courses for teachers of adults," he said. It was also as a result of a burgeoning influence of the National Institute of Adult Education, a Scottish counterpart, and the Advisory Council for Adult and Continuing Education.

Professor Stephens questioned the Department of Education and Science's approach of funding only short term research contracts of a practical nature. "The DES tradition has been to sponsor research which has immediate implications for the field or for policy," he said. Long-term studies and more theoretical approaches were lacking.

But he praised the Department and private foundations like the Leverhulme, Rowntree and Cadogan Trusts for encouraging research while criticizing the Social Science Research Council's poor record of support.

Mr Derrick Fielden, also of Nottingham University, questioned the view that adult education on theory, as topics focusing on theory, were missing from the list. "This raises a serious question and one which SCUTREA, because of its purpose and place in the study of the field, should give serious attention to," he said.

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Reluctant hatchet man



John West, a former UGC member who as vice-chancellor of Bradford University is now fighting the committee's cuts, talks to Ngalo Crequer.

John West was a professor at Sussex and a member of the University Grants Committee when, in 1976, he was invited to become vice-chancellor of Bradford University.

He had also been chairman of the UGC technology sub-committee. So he knew rather more about Bradford than an outsider would have been expected to.

He accepted the offer because he was attracted by its record and its opportunities. Now of course the UGC, minus Professor West, has put Bradford near the top of its hit list, severely reduced its grant and advised it to lose 830 student places. Now he will need to use his understanding of the workings of the UGC to try to make it reverse its decisions about Bradford. "Having been a member I can understand the difficulties they were under," he said. "But my first reaction is that the cuts are so severe and unfair in distribution among other universities and we shall be spending a lot of our time trying to get the decision reversed. We will fight very hard."

"I know the UGC do not like having to do this job. As Rhodes Boyson says, it is not educational policy, it is cutting back on public expenditure. From a human level it is a tragedy that we are talking about cutting down departments. It takes

years to build and it is so easy to knock down."

After war service in the anti-submarine branch of the RNRV he became an assistant lecturer at Manchester University, where he had earlier gained a first in electrical engineering.

He built up a new department of control engineering at Manchester and then moved to Queen's, Belfast, where he became the first professor of electrical engineering and helped to create a new department.

His skills went before him and soon he was invited by John Fulton, later Lord Fulton, vice-chancellor of Sussex to set up an engineering department, as an engineering expert.

"The UGC had said the new universities should not start engineering departments in the classical sense. They had started off saying that the new universities should not do engineering at all, but the universities made plans that they should start engineering in one form or another."

"What I was against, which to some extent I was against at Queen's and Manchester, was students in one discipline receiving lectures from what they regarded as another discipline, and regarded it as a chore. And the lecturers regarded it as a chore. I was keen to get into a situation where there were no

chores. While one would allow specialisms there was a core curriculum which everyone did."

He was at Sussex from 1965 to 1979, as professor, dean and pro vice-chancellor. He was attracted to Bradford in its development as a former college of advanced technology.

In 1978, as he says, the halcyon days were over and contraction faced the universities. He was keen to see that Bradford, although a technological university, should maintain a balanced spectrum. Cuts, if they were to come, should not obviously be in the non-scientific areas.

He was impressed with Bradford's sandwich courses and documents scheme. "I knew Bradford's record was the best of all universities. Sandwich training is right across 34 academic areas, from sociology, to chemistry and engineering."

The uncertainty of funding over the last three years has given little leeway for innovation but one exception has been the personal chair system, introduced by Professor West.

Speaking before the grant letters went out, he said: "The university did not believe in them but now we have six. We have also encouraged leave of absence. We now have more of that than ever before, because if you cannot have new blood in, the

next best thing is to give a shot in the arm to established people."

It was Bradford which bucked the system and for long refused financially to discriminate against overseas students. "I go down in the history books as the vice-chancellor who broke that. When that philosophy started in this university, each year it got more and more expensive, when the university had to say, 'We are against differentiation but this is Government policy and we cannot carry it any further.'"

In Professor West, Bradford has a likeable, approachable, knowledgeable vice-chancellor who wants to get involved, and who has an ability to see and plan beyond existing constraints.

Now Professor West has to take Bradford through its most serious crisis. He said before the detailed allocations were known: "I did not think that I was going to have to be a hatchet man. I have colleagues in industry doing it in one sense, why should universities be exempt?"

"From that point of view there is no reason why they should be protected, but one has to say that education is one thing that can save this country. Information, innovation and communication will be more important than petrol in a few years time. This is what we will sell."

Across the great divide

In our continuing series on the 'British Disease', Andrew Likierman argues that the failure to establish good relations between government and industry is due to a rift between 19th-century and present-day values.



squeezes have been justified on the grounds that they would 'help to make industry lean and efficient'. At other times a dash for growth by letting the economy expand was seen as the way to increased investment by stimulating home demand. Planning has also been given a whirl. A comprehensive variety was tried in the 1964 National Plan. Then in the 1970s an attempt was made to introduce planning agreements as a means of ensuring that the union and government were aware of the plans of individual firms. The National Economic Development Office has provided the only focus, over nearly 20 years, for the most softly-sofely kind of co-ordinating role.

This list could go on and on, and to it should be added all the incentives which the Government has used to encourage firms to take certain kinds of action, and in particular to invest. Because many policies have had the proverbial 57 varieties so the number of policy changes since the war has been very large indeed. What is absolutely clear is that even after so many attempts, industry is not the least bit impressed. It is true that those who are not impressed fall into different camps. There are those who say that the Government should clear off and leave industry to get on with its own affairs. There are those who say that only greater intervention will succeed. There are those who want different measures altogether. But governments of either complexion have gained so few friends that if acceptability to industry is some indication of success, it must be said that government-industry relations have been a manifest failure.

There is of course a long and honourable tradition of trade-complaining about government interference and there is no doubt that many of the measures which have been tried have been bound up with objectives such as containing inflation, reducing unemployment and remedying balance of payment problems. Industry sees itself as the victim of these other policies as well as of major changes in fashion.

A more recent phenomenon is the conviction that other countries do these things so much better. The French, the Germans and the Japanese are favourite models and there are regular calls to follow policies pursued by a particular country, regardless of whether the social or political framework within which the policies operate are similar or not. What is remarkable as an indication of the degree of doubt and disillusionment is the depth of conviction that matters are so poorly ordered in this country and the sheer range of other countries which are held up as paragons of virtue.

It may seem from this depressing catalogue that there are no conditions under which intervention might be successful and that any attempt



Noble beasts, these industrialists... oughtn't one to help them out? You mean give them MONEY? Good Lord, no. Mustn't encourage the blighters!

by government to intervene is to be avoided. Unfortunately this is not likely to be a course of action which is available as an option. In the next few years there is likely to be increased intervention in industrial affairs by most of our major competitors and particularly those countries in the Third World which are likely to pose a major commercial threat to the industrialized nations. One response to this will undoubtedly be to press for a 'fortress Britain' strategy, combining import controls and a highly directed economy. But despite the overwhelming advantage of being a policy which has not yet been discredited, this is just as unlikely to produce results, as all the other policies which have been tried and found wanting. This is because the root causes of the problem lie not in the policies nor in the institutions which have been tried, but in the unreality of expectations and attitudes of the key actors in this tragedy - those in industry who complain about action (or the lack of it) and those in politics who are involved in the formulation and implementation of the policies upon which the action is based.

Taking the industrial actors first the representations made by industry are all too often counter-productive because of unrealistic expectations. As an example, the demands which are made by industrialists or their spokesmen are almost always pressed without taking account of whether it is feasible for the government to take such action in the light of the rest of its economic policy or even whether the action is consistent with international obligations.

Another example is when those in industry plead for consistency in industrial policy and the separation of industrial from economic policy in general. This might seem plausible yet it is also unrealistic, just as when it is argued that 'policies' should be taken out of the management of education or the health service. If policies are about choice, political change will be accompanied by a reappraisal of industrial policy particularly when that policy is seen as a key element in the success of an incoming government. It may well be that the reason behind the unreality of expectations is ambivalence about the need for government intervention. On the one hand there is widespread belief in industry that intervention should be avoided as a matter of principle. On the other hand when things go wrong it is being applied that many of the beliefs are conveniently shelved. The industrial lobby then simply looks like one more among a number of pressure groups and indeed one which has not thought its case out particularly well.

Turning to the expectations of those in politics, if politics is indeed about choice, it is clearly important that the choice be exercised by those

with realistic expectations based on clear assumptions and knowledge of the field in which the choices are being made. Unfortunately this is not a description of most of those formulating industrial policy and many politicians could reasonably be accused of having unrealistic expectations, mistaken assumptions and being ignorant of industrial affairs. Manifestly blithely claim that a new government will solve the problems left by the last and the hustings resound to statements that the incoming government will 'do something'.

So a pattern emerges. The new government proclaims the failures of its predecessor. Phrases such as 'the regeneration of British industry' are bandied around. The policies are put into effect, usually in a watered-down form because what has promised out and is shown to be impossible to implement in the way promised. The policies fail to have the desired effect. The government complains that industrialists/the unions/the City are not doing their bit or that in view of the actions of other countries, success is impossible. The outgoing government explains why its policies were a success despite all the odds being stacked against it. The opposition claims that it will 'do something'. The cycle is then repeated. Meanwhile the relative economic decline of Britain continues.

Politicians of all persuasions seem to be prone to a number of deep-seated beliefs, which help to perpetuate the cycle. The first is that they really can influence industrial performance, and that it is only necessary to find the right buttons to push. Performance will then improve. The second is that the period between pushing the button and an improved performance is very short, certainly within the lifetime of a parliament. Finally there is a belief that industry is about choice, political change will be accompanied by a reappraisal of industrial policy particularly when that policy is seen as a key element in the success of an incoming government. It may well be that the reason behind the unreality of expectations is ambivalence about the need for government intervention. On the one hand there is widespread belief in industry that intervention should be avoided as a matter of principle. On the other hand when things go wrong it is being applied that many of the beliefs are conveniently shelved. The industrial lobby then simply looks like one more among a number of pressure groups and indeed one which has not thought its case out particularly well.

Of course it is true at one level that increased investment may well be a factor in improved economic growth and that government policies may help to achieve this. But such time to have an effect than most politicians are willing to wait and meanwhile a series of changes of policy are likely to cancel out the effects of any single initiative. A week may be a long time in politics, but many investment proposals take five or ten years to plan and bring on stream. As for a belief in the magical properties of investment in machinery, this must stem from a love of things which can be seen and touched. It does not seem to matter if the goods produced from these

machines can be sold or not, be enough as an outward sign of the inward and spiritual associated with successful policy. Less tangible forms of investment such as research and development and market development have a much lower place in the actual hierarchy.

One of the most striking examples of the failure of politicians to understand industry is the history of the attempt by the 1974-9 Labour Government to implement a policy of planning agreements. These agreements were based on the idea that managements should discuss their forward plans with the unions, the Government, a common body in other countries and one which had been applied particularly successfully in France. Instead, therefore, of being sold to industrialists as something which the French had done for their advantage, it became a political centrepiece of the incoming Labour Government's programme, and was therefore seen by industry as the beginning of the end of the mixed economy and the arrival of a communist planning system. Many indeed have been precisely such ministers were intending to do, even though they could have marketed it in a way as to make more acceptable to those who wished to lead to the slaughter, failing to understand what the situation would be, the failure of policy was guaranteed.

I would like to suggest that the terms such as 'unemployment', 'stagnation', and through the annual expectations, is a deep divide between those who are the industrial policy and those who are helping to formulate policies. Academics and research staff, those civil servants administering them, as well as the politicians, divide is based not on occupational differences, but on values inherited from the nineteenth century. What makes it difficult for industry to get to grips with the problems is some kind of barrier which means that industry are seen as inflexible, professional or land ownership, the associated with these values and industrial and commercial success, matter for suspicion rather than gratification and the acquisition of wealth is a matter for envy rather than emulation. A dedication to the amateur and the distrust of any serious ambition can be thrown into the mixture.

The depth of the division is because politicians very rarely have industrial experience and most of industry is an unknown territory. Some have a romantic idea that industry is 'the real world' and that those who work in it are the successful, noble savage or the heroes of war, and drawers of water. Others regard it with distaste, either as an exploitative force in society or as an activity which gentlemen should not be involved. Many who advise these politicians are prone to the belief that industry is just plain boring and uninteresting to the intellectual standard of the professions. Their disillusionment is fed by the atmosphere of failure.

There are of course exceptions on both sides. There are those in politics who have previously been in industry, and those in industry who have a realistic appreciation of the political world. Movement is also taking place through schemes such as the Management-Industry Trust so that more informed, but the prevailing culture means that any major change in attitudes and the prospect of change in this area do not look good.

It would be helpful to assume that the educational system has a part to play in the changing of attitudes. But to ensure that this expectation, too, is not unrealistic, it is worth asking whether those who have chosen the professional route need for change sufficiently strongly to be convinced if not by the example.

Many of the participants, perhaps a majority, appeared to feel considerable empathy with the message brought by Martin Trow across the Atlantic from Berkeley. He argued persuasively that British higher education, despite the Robbins ex-

The author is a lecturer at the London Business School.

HIGHER EDUCATION: ACCESS AND DEMAND

Through mud and blood to the green fields beyond

by Peter Scott

A mood of fatalism seemed to settle like a fog over the 38 participants (most of them anyway) in the second Leverhulme seminar, on the crucial question of demand for and access to higher education, which was held at eighteenth century Middleton Hall a dozen miles south of Edinburgh.

Everyone was disposed to object to the stark statement by John Farrar, planning officer of Sussex University, that there is little prospect of a decline in the total size of the higher education system by 1990 being averted, but almost no one seemed disposed to challenge it effectively. A last pseudo-pavlovian reaction inherited from higher education's golden age flickered momentarily and then died away.

Indeed the most hopeful vision of the future seemed to be one described in graphic terms by a senior civil servant - 'through mud and blood to the green fields beyond.' But even this was too optimistic for some who whatever their emotional reservations seemed reconciled intellectually to the inevitability of a period of categorical decline.

The proceedings of the seminar did not modify substantially this first impression. The stuttering age participation rate was treated as a product of almost divine inevitability which human agency could do little to effect. Indeed demand for higher education seemed to be regarded by many not simply as inevitable in its (declining) action but impenetrable and even mystical in its cause. Only a few of the participants really seemed to be convinced by down-to-earth economic interpretations of declining demand. Most seemed to feel, almost hopelessly, that society had turned against higher education in some deep and powerful way, and that reduced demand was the inevitable and irreversible outcome.

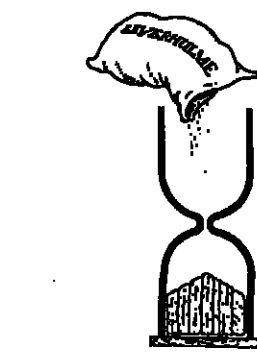
With this as a starting point it is hardly surprising that few positive policy initiatives were forthcoming. On a levels and entry standards, it was generally agreed that the present practice if not the policy of most universities was unduly restrictive, but it also seemed to be generally agreed that looser entry requirements would be unlikely to lead to an upsurge of demand, at least from 18-year-olds. The polytechnics and colleges were simply ignored or 'let off with a caution' for marginal liberalisation.

A similarly minimalist assessment was made of the possibility of attracting large numbers of mature students into higher education. Again, criticism of the existing practice of higher education was more than matched by scepticism about the potential demand, coupled with a strong tendency among the 'economists' to regard mid-career higher education as a soft consumer good rather than a hard investment good.

It was the same with women and overseas students. The present strong demand from women tended to be dismissed as an example of middle-class women 'catching-up', and the question of overseas students was discussed almost exclusively in terms of the threat the present policy of full-cost fees posed to institutional viability and its implications for aid policy.

Perhaps this torpor and lack of imagination about potential sources of new demand reflected not simply a feeling that nothing new practical could be done to find 'new students', but also a surreptitious conservatism - the feeling that the things that higher education would have to do to attract 'new students' at a time of demographic decline would be very radical indeed and so possibly subversive of traditionally conceived academic standards.

Many of the participants, perhaps a majority, appeared to feel considerable empathy with the message brought by Martin Trow across the Atlantic from Berkeley. He argued persuasively that British higher education, despite the Robbins ex-



pansion and despite the polytechnics, remained an essentially elite system, and that its fundamental character with its close commitment to academic standards placed considerable constraints on the expansion of access.

Professor A. H. Halsey of Oxford sensed this barely acknowledged conservatism when he said that what we, the British, wanted was to move from our present system which embodied low access and high standards, not to the American pattern of high access and low standards, but to a (perhaps unattainable, although he did not say so) combination of high access and high standards.

The trouble, as some of the participants including Professor Halsey recognized, is that during the 1980s higher education may lose its appetite for expansion precisely at a time when society's expectations of education as a mechanism of social mobility may actually increase (because the benign combination of structural change and growth in the economy which produced so much mobility during the 1950s, 1960s, and 1970s will be a much less efficient instrument in the depression-ridden 1980s).

This unsettling prospect was in the main wished away by hopeful statements about higher education not being for everyone. It was left to Richard Hoggart of Goldsmiths, the ACACE, Unesco, and *The Uses of Literacy*, to play such complacency and by implication the whole drift to restrictive conservatism so alarmingly displayed during the seminar.

He derided the 'noble savage principle' and appealed to the seminar, and to higher education, never to rationalise the inequality of access that prevailed at present. Gloomily he stated that Britain was a more polarised (and culturally impoverished) society in 1981 than it had been in 1945.

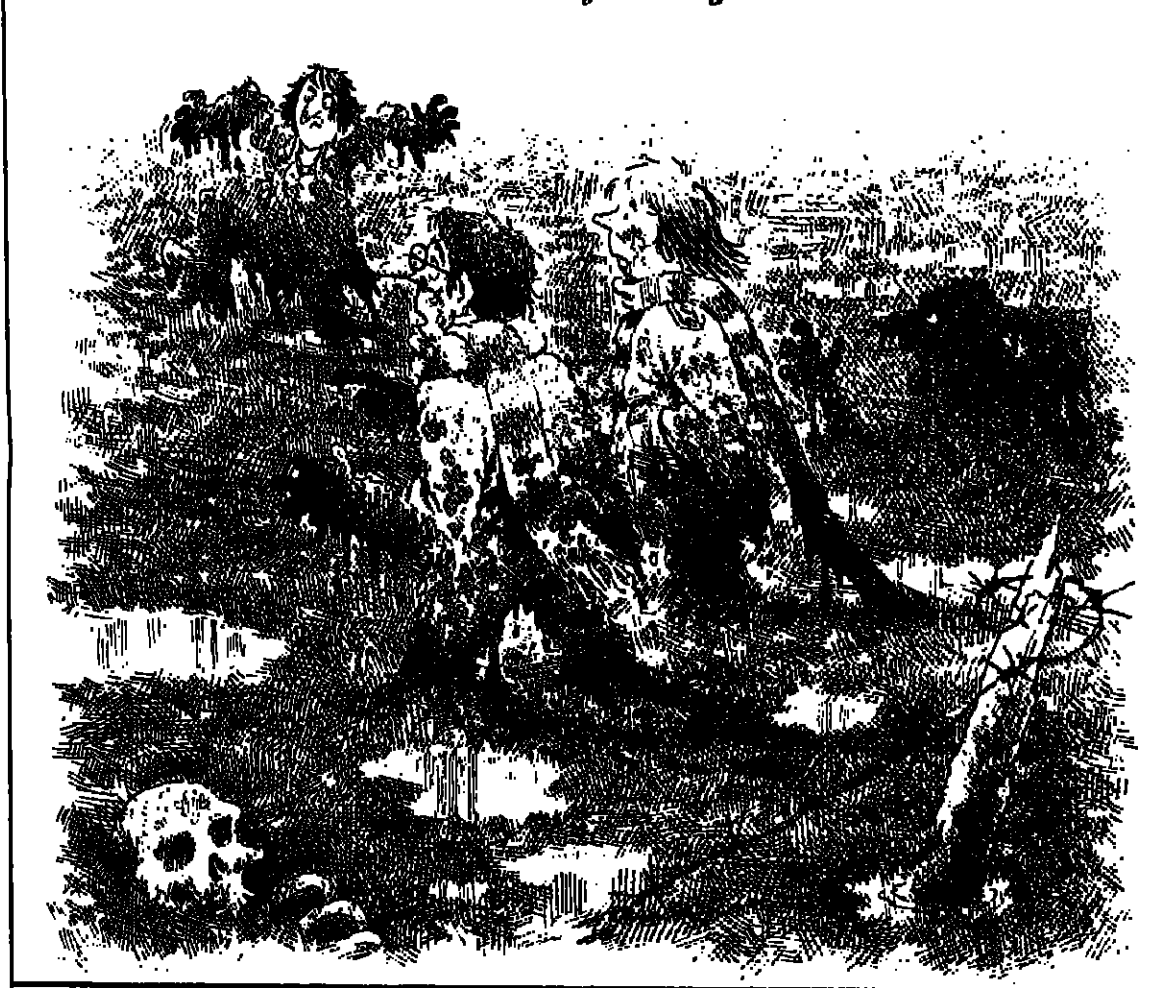
Sadly it was an appeal or a battle-cry that seemed to fall on deaf ears. At the end of the seminar there was more than a suspicion that higher education had lost its faith in its ability to conquer new types of students, that the philosophy of 'more means worse' now had a readier audience (not of course in its red-blooded ideological aspect but rather in a more neutral structural context).

What was left unclear was the reason for this drift to conservatism. Was it a genuine conservatism, the belief that while an expansion from seven to 15 per cent of the age group could be contained within the academic tradition an expansion from 15 to 25 per cent could not without irreparable damage? Or was it a reaction to the new restrictions on resources, the belief that without new resources the accommodation of 'new students' would dilute quality rather than add to diversity?

A lot depends on the answer. If it is the first, the prospect is simply of 'mud and blood' stretching into the foreseeable future and perhaps a growing dissociation, even tension, between the values of higher education and the demands of society. If it is the second, the present combination of fatalism and conservatism may be a passing mood, one that will lift as we approach the 'green fields' beyond.

Halfway through the seminar, a civil servant pointed out that there had been a failure to question the tacit assumption that it was a good thing to increase participation in higher education. 'Higher education has got to work out what the case is for buttressing their own employment' by increasing participation rates," he added only. This went

Are you sure it's this way to the green fields?



Skirmishes unresolved by debate

There was an atmosphere of defensiveness surrounding the seminar on demand and access to higher education - understandably, as it was held on the eve of the unleashing of the University Grants Committee letters.

Again it was held under the Chatham House convention, forbidding direct reporting in the hope that lack of restraint would lead to new, improved debate. But in the main, the old hobby horses were trotted out.

There was general agreement that there would be a decline in demand during the next decade. The only squabbles were over how much of a decline. It was gloomily accepted that it would stem from a variety of causes such as the demographic downturn, a reduction in overseas students which could also affect home student courses, and an increasing concern among young people for vocational relevance.

It was decided that this could be met by three options: cutting back the higher education system, changing it to meet potential new demand, or simply recruiting students wherever they could be found.

There was a strong case made for cutting back, with the underlying concern of maintaining the binary divide and standards of academic excellence. But the majority favoured change, although there was considerable uncertainty as to how this could be achieved, and an underlying suspicion that it was motivated by a panic-stricken desire to recruit students wherever they could be found.

The economists and social scientists came to blows over how much economic factors determined demand. Young people were aware of and responded to economic stimuli and the benefits or otherwise of staying on at school and moving into higher education, said the economists.

Nonsense, said the social scientists: Things were much more complex, with personal reasons such as home background or a desire to study a subject as an end in itself being completely uncorrelated to pragmatic perceptions of the economic market.

Halfway through the seminar, a civil servant pointed out that there had been a failure to question the tacit assumption that it was a good thing to increase participation in higher education. 'Higher education has got to work out what the case is for buttressing their own employment' by increasing participation rates," he added only. This went

largely unanswered. However, there was considerable debate over working class participation, which had been falling over the past decade, and whether it could or should be increased.

An Open University expert said the large number of young people who had successfully come through an OU course contained far greater working class representation than in a conventional institution, and many were very antagonistic towards the conventional education system.

One participant demanded to know why it was reckoned that working class school leavers were making an irrational choice - they might not make much more money with an HE qualification.

Those who found the idea of actively rejecting higher education unlikely criticized the universities for their lack of outreach to the schools and further education colleges in their areas. One of the biggest disincentives of entry to higher education was not knowing what the next step involved, they said, and the fact that more than 50 per cent of young people had no contact with higher education was an appalling waste with no possible justification.

Allowing universities to retain their traditional forms of entry while letting other forms of higher education diversify would 'reinforce class bias and get universities off the hook of having to think more intelligently about entry.'

There was an unresolved skirmish over whether working class participation had been inhibited by middle class girls who had gone on to university or polytechnics because of the decline in college of education places.

It was waggishly suggested that this alternative approach theory could be tested by cutting off the HND route for boys and seeing what happened to them.

There was no such agonising over whether it was desirable to increase

mature student representation. It was accepted that whole considerable changes would have to be made to accommodate mature students, demand for them was a great unknown. Far from damping things down, this led to warnings that too much caution was no virtue - the Open University had been a highly successful gamble.

Mature entry had implications for entrance requirements, and there was fairly wide agreement that universities in particular should be making their requirements more flexible to encourage minority access.

'The universities are much more conscious of their academic standards than their social responsibility,' was one stern comment.

Positive discrimination was scarcely touched on, however, and there was the caveat that moving on a large scale from selective entry towards open access could make higher education virtually impossible to plan and control, and could end up completely undermining the Robbins principle of response to demand.

But the university entrance requirements of two A levels came in for heavy criticism in any case. It was, alleged a participant, a mere device to regulate distribution of places and ensure that not everyone in Oxbridge was upper middle class. It would make very little difference were it abolished altogether.

A levels were not even a 'reasonable predictor', said another. While an A level in maths was a fairly good index of ability for a maths course, the correlation in social sciences was practically zero.

Quite how one changed things was never resolved after a neat bit of back-passing when the academics announced that DES grants could be very flexible, but that this had never been put in operation.

Throughout the conference, there was a tendency to equate higher education with the universities, although a clear need was identified to pay much more attention to further education and indeed to erode the division between advanced and non-advanced FE.

A final plea from the chairman for an idea of what academics were prepared to trade off for the sake of increased access met with little response. The seminar was not notable for proposing solutions - it was safer, it seemed, to look at problem areas without linking them up.

Olga Wojtas

Graduate supply exceeds demand

Playing the applications numbers game

As Government studentships now support between two-thirds and three-quarters of home graduate students, it is the numbers provided that mainly determine the students' numbers. A rapid expansion began in 1957, when the numbers of studentships in science and technology began to be increased rapidly from year to year and awards free of any parental contribution were first given in the arts. At the same time, studentships became available for taught courses in science and technology. In the social sciences, the most rapid growth came immediately after the setting up of the Social Science Research Council in 1966.

As far as one can judge, there have always, since 1945, been more graduates wanting studentships than awards available, except, in some years, in taught courses in science and technology and in the schemes developed to encourage scientists to do industrial research.

The students are mainly drawn to postgraduate study in interest in a particular subject, the wish to do research and unwillingness to leave the known world of the university; only on taught courses in science and engineering are vocational motives of any importance.

The universities and polytechnics and their staffs want graduate students largely to fulfil their prime purpose of advancing and disseminating knowledge. There are both pleasure and prestige in teaching graduate students, and in some fields they are the means through which staff do their research.

To judge by the limited published sources, the Treasury seems to have been persuaded to disburse funds by arguments relating to employers' needs for people with higher degrees, and especially the need for university teachers. The first slowing down of the speed of growth came after the Swann committee, in 1966, drew attention to the excessive share of the brightest graduates staying in the universities, and the virtual cessation of the growth in numbers from 1972 suggests that arguments about employers' needs were no longer so convincing.

Employer needs are better judged by their actions than by surveys of their opinions, and the Department of Employment's survey of 1970 graduates shows that, seven years from graduation, with a few exceptions (notably for Masters degrees in engineering), employers paid more for years spent gaining experience in employment than for postgraduate study.

What employers do want is short full-time courses to give their employees particular kinds of knowledge — for example on the latest developments arising from research, or the applications of new techniques. These are booming. Another potential growth area is courses to bring back into employment women who have raised a family.

If the current scale of provision for full-time graduate study had to be justified on economic grounds, it would mainly fail the test: the overall return on the investment is negative, and so it is probable that only a few, very vocational, forms of study would be justified on any but the smallest scale. There are, however, other arguments for some postgraduate study. One is that through it Britain is able to make some contribution to international scholarship. Another is that, by giving selected students an enjoyable experience it adds to the quality of life in Britain and the quality of our civilization. Graduate students, like art galleries, opera and orchestras, are something that a wealthy country, and we are still a wealthy country, ought to be able to afford. But there is nothing in this argument that tells us how many.

Ernest Rudd

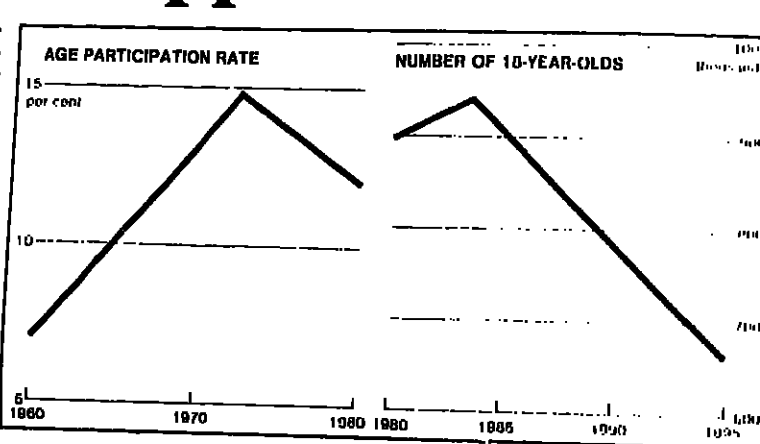
Since 1962/63, the year before the Robbins report, the number of home students in publicly-funded higher education in England and Wales has grown by about 130 per cent from 273,000 to some 633,000 in 1980/81. (These, and all other figures exclude students on short courses and in adult education.) The annual growth rate of about eight and a half per cent in the 1960s was not maintained in the 1970s, but, even so, thanks to the Open University, was still around four per cent a year up to 1978/79. Again thanks to the OU, the proportion of part-timers was the same, 38 per cent, at both dates, but went down to 27 per cent in 1980/81. With the move away from evening to more intensive part-time day courses in the public sector, the proportion of total student effort which comes from part-timers has probably increased slightly.

How many students enter higher education for the first time in a given year and with what qualifications are, surprisingly, not subjects on which statistics are collected systematically. A substantial proportion of students starting a course below postgraduate level have already gained a qualification in higher education. Among full-time degree students, the proportion is at least about five per cent, with around 85 per cent holding two or more A level passes (and no higher qualifications). Among full-time students on non-degree courses, the proportions are roughly 15 per cent and 50 per cent, with the balance including entrants with one A level (the minimum for HND courses), ONC/D and intermediate professional qualifications. Among part-time students (including the Open University), over 40 per cent already hold higher education qualifications, and may be less than a quarter have two or more A levels (their highest qualification).

Hence roughly 127,000 and 90,000 people started full- and part-time courses respectively in 1976, but only, say, 120,000 and 50,000 were initial entrants. The flows in and out of higher education are clearly far more complex than the official statistics reveal.

Full-time students who entered higher education when aged under 21 comprise two-thirds of the 'load' generated by home students. These are the entrants to whom the Age Participation Rate (APR) calculated by the DES applies, this being the number of such entrants as a percentage of 18-year olds in the same year. The APR (for Great Britain) doubled between 1960 and 1970, from 7 per cent to 14 per cent, it peaked at 14.2 per cent in 1971, then fell to 12.4 per cent in 1978 and remained steady. The Qualified Participation Rate (QPR) is the number of such entrants as a percentage of those achieving two or more A level passes (or three or more Scottish Highers). It was as high as 103 per cent in 1967/68 and fell thereafter to 82 per cent in 1978, rising only slightly since. But if the entrants to teacher training with lesser qualifications than two A levels, whose number has progressively fallen over the last 10 years are excluded, these rates show much smaller increases. The QPR from 88 per cent in 1969 to 80 per cent in 1978, and the APR from 12.4 per cent in 1972 to 12.0 per cent in 1978. For 1980, the rates are 88 per cent and, an all-time peak, 12.5 per cent.

A similar stagnation is apparent in secondary schooling. Despite the raising of the school leaving age in 1972 to that at which the first public examinations are taken, the proportion of school leavers with five or more O level (or CSE grade 1) passes rose from 15.3 per cent in 1960 to 22.1 per cent in 1970/71, then more slowly to 23.7 per cent in 1976/77, and has probably held steady since then. Furthermore, more of those so qualifying are leaving school before entering the sixth form and are not choosing FE colleges as an alternative for A level courses. Hence, as most sixth formers have five or more O levels, the proportion of 17-year-olds still in school has followed a similar line, fixed at around 20-21 per cent since 1970/71. The proportion on full-time courses



in FE colleges continued to rise, to about 10 per cent in 1976/77, but with the growth mainly in non-GCE courses, compensating in some measure for the decline in part-time attendance.

The proportion of the relevant age group gaining two or more A levels doubled in the 1960s to 14 per cent, held steady for four years, moving up to 15 per cent in the mid-70s and has remained there. Of school leavers so qualified, a growing proportion has entered employment rather than continue in full-time education: 21 per cent in 1967, 29 per cent in 1977. This trend has been more marked among those with 'good' certificates (at least grades CCC or equivalent): nine per cent to 15 per cent.

There are thus three main trends within the educational system behind the declining proportion of the age group entering full-time higher education:

- (1) the opportunity to entry has been diminished for those with less than two A level passes by the raising of entry standards;
- (2) the proportion of the age group who, during compulsory schooling achieve the normal qualification for A level courses has levelled off;
- (3) the proportion of those who pass two or more A levels and leave for employment has grown.

Explanation for trends (2) and (3) may lie in policies and practices in secondary schooling. First, throughout the 1970s the 16 and older age groups expanded, and O and A level streams may not have been enlarged so as to keep the thresholds the same as in the late 1960s. Secondly, the school leaving age was raised in 1972, though this would be expected to increase demand for sixth places. Thirdly, comprehensive reorganization was largely undertaken in the 1970s.

An economic argument for declining participation is that the earnings of those who go into jobs on leaving school have risen much faster than the earnings of adults (both manual and non-manual) or of new graduates, and that the student maintenance grant has fallen behind all of these. The factors by which each of these rose between 1975 and 1980 are 7.5, 5.5-5.9, and 4.2. Youth unemployment seems not to have been an incentive for the better qualified to stay at school.

A third line of explanation is that the gap has widened between what higher education and what is available leaving aside the question whether higher education has fallen for and content of secondary education, and considering only leavers entry standards for qualified leavers have risen, we find that these have risen for the universities in the mid-1970s, and before and after were much the same; that with the exception of medicine and dentistry they were more uniform in 1980 than in 1968; but that entry to individual vocational subjects has become relatively more competitive.

Students aged 21 and over comprised 14 per cent (10,500) of all home entrants to higher education in 1961, and rose to 24 per cent (35,200) in 1980. The increase, until 1968, was largely due to deliberate recruitment of older people into

teacher training, and since then has been mainly to other courses in the public sector. The ratio of men to women has remained fairly constant at around 60:40, and the women are on average older than the men. Probably a larger proportion of mature students than of other students are in the social sciences and humanities.

The Age Participation Rate for young entrants to part-time higher education can be estimated at 1.6 per cent and 2.3 per cent in 1976, a much smaller rate of increase than 1976/77's figures, account for a per cent more male than for qualified school leavers aged 18 and over, and already stated, many are not initial entrants. Even with the Open University, only a quarter of part-timers are on degree courses; the majority are on directly vocational courses in the public sector.

Recent years have seen women's participation in post-secondary education catching up with men's. The ratios quoted below are the ratio of women to 100 men.

Since 1980 girls have been as likely as boys to leave school with five or more O levels. In the last couple of years they have been as likely to be still at school at age 17 (1960/61: 78), but at attendance at school and FE colleges are combined the ratio falls to 84 in 1976/77, because day release from employment is much less widely available in the jobs girls enter. For two or more A levels the ratios in 1960/61 and 1978/79 were 59 and 88, but the girls were more likely to enter to higher education. At the point of entry to higher education the picture is more complicated. The ratio in both 1966/67 and 1980/81 was 79, but was higher and lower in between, because of teacher training's expansion and concentration, the bulk of entrants with less than two A levels having been women. If the latter are omitted, the ratio shows a consistently upward progression, from 62 to 79.

The ratios for mature and part-time students are lower: 64 for full-time entrants aged 21 and over in 1976/77, and 28 for all part-time entrants.

It has been repeatedly shown that, for young people of equal ability, the likelihood of continuing in full-time education after the minimum school-leaving age diminishes, the lower the social class of their parents. With little doubt, there is still a considerable untapped pool of ability from the lower classes, of young people with the innate ability to benefit from higher education. Though the differential distribution of measured ability between classes means that equal participation rates for all classes may be an unrealistic objective.

The Age Participation Rates for middle-class students (Registrar General's classes I, II, III) can be estimated as 19.2 per cent in 1961/62 and 27 per cent in the late 1970s, and for working-class students (classes IIM, IV, V) as 3 per cent and 15 per cent respectively. The widening of the differential, despite the huge expansion of provision.

Participation rates differ between the regions. If the average for England and Wales is 100, participation in full-time higher education by people from the South-East and Wales stands at about 110, and from the North, the West Midlands and East Anglia at about 85.

In 1978 and 1979, guided by the Robbins principle, the DES published projections of future entry rates, giving high, central and low

variants. The actual rates for the few years show the low variant to be, so far, the most accurate.

What are now the prospects for the next few years? There is no sign of improvement in the proportion of the age group gaining two or more O levels though, possibly, just begun to affect the 1986 population, may remove artificial restrictions on access to O level status. The same applies to the proportion gaining two or more A levels, and the latter dropped between 1970 and 1978/9, particularly in FE colleges. But the reduction in O level entrants, the QPR excluding 'unqualified' teacher-training entrants is the best guide for the future, and that, along with the APR, has recovered slightly in the last two years, especially for women. 'Catching up' of part-timers by women is of course a good point. But the women who get to more A levels are concentrated in the non-science streams, which have lower participation rates, while the science streams, which have higher participation rates, are still dominated by men.

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John Farrar

The author is planning officer of the University of Sussex.

Why some stay on while others leave

This is how Alan Gordon introduced his paper on the factors affecting the educational choices of young people.

"I have attempted to summarize what I regard as some of the more important research findings on the factors which influence the demand for post-compulsory education. I have obviously been selective about just what evidence is included and what is not — it is, after all, a fairly big field. My paper is divided into three main sections.

"The first part I have loosely called sociological, but it is particularly concerned with the ways in which home background is an important determinant of just who goes, and who does not, stay on to higher education. As far as social class is concerned, I reproduce evidence — all of it very well-known — to demonstrate that British higher education in 1981 is hardly any more representative of the population at large than 10 years, 20 years or 50 years ago — this in spite of a threefold expansion of the higher education system since the early 1960s.

"In addition, it can be shown that most working-class drop-out occurs at 16; and that if we are all concerned about the differential propensities of young people from different home backgrounds to continue their studies, then it is in the years before the end of the secondary school leaving age that public policies should be first directed, rather than at higher education — that comes later.

"One sociological aspect of the demand for post-compulsory education might be worthy of some discussion here, is the gross under-representation of some ethnic minority groups in the higher levels of education. Recently the Rampton Committee report highlighted this point: research from 1978-79 showed only one per cent of West Indians going on to a full-time degree course. In the paper I note the advantages conveyed by the chance of birth, as a male, into a professional family. To be female, working class and black means that your chances of going on to higher education are so remote as to be almost meaningless.

"In the second part of my paper I discuss some aspects of the influence of the school on young people's educational aspirations and intentions. I focus particular attention on the ways in which it is thought that structural changes in the organization of schooling — I am thinking particularly here of comprehensiveization — the ways in which these structural changes might influence the demand for upper secondary and higher education. The evidence on the influence of comprehensive reform is rather ambiguous. Certainly it was thought that if secondary education institutions did not cut their pupils off from post-compulsory opportunities then we would expect to see both more pupils and different kinds of pupils staying on into sixth forms, further and higher education. We have yet to see this — although as I noted, the evidence is somewhat ambiguous.

"In the third part of my paper I have assembled a summary of research relating to the influence of economic factors on the educational choices of young people. It has to be pointed out — and this is something that appears to be frequently forgotten — that staying on at school, or going on to higher education, is not without cost to the young people concerned and their parents. And that families have different abilities to bear these costs. I have yet to be given a convincing rationale for, on the one hand, the provision of grants to higher education students, but, on the other, virtually nothing for those who stay on after 16.

"In addition, of course, we now have a veritable jungle of awards, grants and benefits for those who quit school at 16. The thesis discussed in the third part of my paper is that young people are aware of, and respond to economic stimuli, and to their perceptions of the costs and benefits associated with staying on or leaving school.

Finally, I attempt to draw out some policy issues from the paper as a whole. In 1978 the Department of Education and Science published a discussion paper on the future of higher education. In an article on this discussion document I criticized the DES's 'neutral' approach by commenting that the DES saw itself at that time as a passive force, rather than as an initiator of action — a catalyst. I felt then, and still feel, that access to higher education can be improved, demand can be stimulated and participation by under-represented groups in all forms of post-compulsory education, both full-

time and part-time, can be increased. Only two weeks ago Lady Young appealed for more young people to be encouraged to stay on in full-time education after the age of 16. Mere appeals are surely not enough. And this brings me to my final comments.

"We have put a lot of work into preparing papers for this seminar. The Society for Research into Higher Education and the Lancaster Institute have laboured long and hard to get this series of discussion groups off the ground. Leverhulme is putting a lot of money into the inquiry. And most of you have travelled vast distances to be here. If we only concern ourselves with the relatively short-term we've all wasted our time. In our discussions on demand and access we have to push our horizons beyond the latest public expenditure white paper and consider the long-term: as Keynes is a dirty word right now we can feel justified in forgetting his maxim that in the long run we're all dead! At the DES and in government circles short-term planning — planning? — might be the order of the day, but for the purposes of this inquiry and for today's discussions especially, we just have to take a long view.

"At the end of my paper I comment that the Government of 1981 and the DES have virtually no educational policies for 16-19 education or for higher education, other than the general economic policy to reduce public expenditure on both. I dare say that representatives from the DES will come back to me on that one. But I am hoping that for the rest of today we can do much better!"

Uniform standards of excellence and elitism have barred 'wider access' to higher education

Britain's universities, polytechnics and colleges still make up an essentially elite system of higher education which places great constraints on wider access, Professor Martin Trow, director of the Centre for Studies in Higher Education, told the seminar.

He added that both conservatives and progressives in Britain shared three key assumptions: that entry to higher education should be gained by the academic standards of institutions, which award degrees should be uniformly high; and that high standards were best maintained by holding up the strongest institutions as models.

"While it is recognized that not every scientist can be a Nobel prize winner, it is taken as a norm that work of world class can be expected at every university and that the differences in degree and not in kind," he said.

The high and common standards that marked British universities and polytechnics ultimately rested on resources like "rich staff/student ratios, for so many years tenaciously and indeed successfully defended at or near 8 to 1 through decades of economic hardship" and on the relatively rich provision of buildings, libraries, laboratories and so on.

Professor Trow emphasized the importance in Britain of a network of structures, organisations, norms and patterns of behaviour which were tightly interlocking and mutually supportive. This network was held in place not just by habit but by a continuing conviction of what a university was and how it should work.

The result was great constraints were placed on wider access. "You can try to increase the total numbers in the system, more or less successfully as Britain did during the 1960s, or try to modify the social composition of entrants to higher

education, increasing the numbers of the under-represented groups, either of class or of ethnic origin. You can also try to modify the age distribution and bring more mature students into the system and try to bring in more part-time working students."

But Professor Trow added: "As long as one is meeting high standards both for entry and for successful completion of work toward the degree, the network of institutional and normative forces sketched will make any substantial changes in the number or the kinds of students that you admit very difficult."

He warned against assuming too much that the American experience could be translated into British practice. The transfer of social technology from one culture to another was always exceptionally difficult and sometimes counterproductive.

In the United States higher education had always been so dominated by its broad social functions and by

market forces that the question was how the system could cope with issues of competence, performance and achievement.

For Britain, the problem of higher education might be to find ways to increase its links with the larger society, how to strengthen its popular functions, but in America the problem was how to maintain the integrity of institutions and their commitment to academic values in the face of powerful social and market forces.

Professor Trow ended his paper with a suggestion that there should be a concrete proposal to establish an open-door full-time degree-granting university in Britain.

"Can we do the kind of analysis of such a proposal — its costs, its academic forms and structures, its political feasibility, etc. — that would improve the chances for successful social action? After the pleasures of reflection, even academics might find it rewarding to be efficacious."

Forging future overseas admissions

Future policy on the admission of overseas students must take into account the possible effect of further reductions in overseas students on the viability of courses and so on opportunities for British students, Mrs Maureen Woodhall, warned the seminar.

She pointed out that overseas students were heavily concentrated in some geographical and subject areas. While they made up only 7 per cent of undergraduates, they made up 36 per cent of all postgraduates. In some institutions more than a third of students were from overseas; in others fewer than 3 per cent.

They were also heavily concentrated in science, technology and engineering courses. More than half of the overseas postgraduates in these subjects were on courses on which British students were in a minority.

Mrs Woodhall explained that although the number of overseas students had trebled between 1958 and 1978 (and as a percentage of all students from 5.6 per cent in 1971 to 11.4 per cent in 1978/79), there was some evidence that the quota policy adopted by the last Labour Government might have worked given sufficient time.

She admitted that a recent study by Professor Mark Blaug has shown that even after making the most generous assumptions about the economic benefits brought by overseas students, their net cost exceeded these benefits. Although marginal costs for extra students were usually lower than average costs in higher education, especially in arts and social science, many overseas students were concentrated in very expensive postgraduate courses in science and engineering.

However, Mrs Woodhall claimed that, although unquantifiable in any precise way, the presence of overseas students did bring important positive benefits to Britain. She endorsed the idea that any expenditure on subsidising overseas students from poorer countries should be an element in our external relations budget not the education budget.

One of the difficulties before the introduction of full cost fees was that all overseas students received an indiscriminate subsidy regardless of their country of origin. There had been a shift away from poorer Commonwealth countries towards richer countries, particularly the oil-producing countries, in the overall composition of the overseas student body.

Mrs Woodhall concluded that an important advantage of full cost fees was that they could be more easily linked with a policy of selective aid to poor students.

Wooing mature students is 'best defence against cuts'

Higher education institutions have every reason to want to attract mature students in the 1980s, seeing student demand as perhaps their primary defence against cuts, said Dr Geoffrey Squires of Hull University's adult education department in his paper.

The polytechnics and colleges already have a tradition of mixed age entry; but the impending shortfall of 18-year-olds has also concentrated the minds of the universities wonderfully in this direction," he said.

In spite of apparently entering a period of unprecedented centralized control over higher education, there were signs that both public sector higher education and universities were making deliberate efforts to attract more mature students.

Dr Squires admitted, however, it was not easy to examine the question of mature entry into higher education as the students did not constitute a relatively homogeneous group like 18-year-olds, but differed in their needs and expectations. If the past decade was used to try to help forecast demand, it showed the number of mature students in

universities had increased slowly but fairly steadily, and they now accounted for more than a third of all public sector entrants.

Institutions seeking to attract mature students pointed to increased demand, as did the students' own view of themselves — self doubts about their ability to return to study were being counteracted by a spreading belief that they could.

"Of course, adults have studied for years in night classes in FE or in adult education," said Dr Squires. "However, the belief that adults can study successfully for a degree or perhaps something near a degree is probably due mainly to the Open University and its visibility."

But these indications of increased demand were offset by financial factors which seemed to forecast a decrease.

There was still no standard university policy on fees for part-time degrees — these could vary within an institution — and the chances of getting a grant depended on the policy and finances of the student's local authority.

The likelihood of getting a job at the end of the course depended on general levels of graduate unemployment, and also on the type of institution attended and the subject studied.

Demand for higher education could be stimulated by a more generous financial policy, either through student grants, loan schemes, paid educational leave or control of fees which would make the costs and risks of mature entry generally more tolerable.

Flexible admissions requirements and credit schemes permitting both interruption and transfer of study would also benefit adult students in particular.

But when trying to predict demand, occupational and vocational factors were decidedly ambiguous, Dr Squires pointed out.

There was a groundswell of support for paid educational leave, but present economic stringencies and the attitude of most employers would tend to limit it. While it might well increase over the next decade under the impact of technological innovation, the emphasis would be on voca-

tional, commercial and technical subjects, with some withdrawal of support for general or liberal education.

Part-time study, Dr Squires suggested, would benefit even if there was to be large scale unemployment, as adults with jobs could try to upgrade or reorientate their skills while working, and unemployed adults could attend part-time evening courses and still qualify for benefit, while greater leisure through a reduced working week would make part-time study easier.

However, adults giving up their jobs to study full-time would be taking a major risk.

If there was to be a stronger vocational emphasis in the 1980s, as Dr Squires believed there would, this would lead to an increase in part-time advanced further education courses and non-certificated vocational short courses, perhaps at the expense of full and part-time degrees.

"While degrees are the core of higher education for those who work in the system, they may not occupy quite such a key position as regards

mature students. Taken full time they demand a considerable commitment in money; taken part time a considerable commitment in years; and either way, a major investment of effort; any of which the mature entrant, with his or her multiple responsibilities, will want to think hard about."

It was essential, said Dr Squires, to have an adequate information and guidance service for mature students, so that they were enrolled not just on any course, but on an appropriate course.

Dr Squires also suggested that adults be allowed to take aptitude or other entry tests which could help them decide whether to apply to an institution or not.

But he stressed that "a major question mark" hung over his entire paper in the form of doubts about government policy on higher education, including mature entry.

Any cuts would be likely to damp down potential mature demand, for if people were aware that higher education was being cut back, they would be more hesitant in applying for it.

If friendship is about sharing one's most valuable assets with one's fellows, then Britain must surely get the Friend of the Year award from American, Australian and Canadian universities colleges and schools.

Rarely can any country have voluntarily decided to transfer such a massive amount of goodwill from itself to its friends and rivals, as has Britain in East and South East Asia over the matter of full-cost fees overseas students. Although I have personally been spending a considerable amount of time in the past year studying the overseas student question, I confess I was not wholly prepared for the depth of reaction to British policy encountered in Malaysia and Hongkong.

Almost every day of my recent visit there was some reference in the press to the level of fees in Britain, and to the fact that a massive influx of interest to Canada, the United States and Australia was taking place. A quick scanning of the Malaysian English language press for the past few months reveals such headlines as:

Boom-time for Canadian Colleges Our students 'take Canada by storm'

Team to tell all about US higher education

Oh, America! Musa returns - singing praises of the Varsity El Dorado (Datuk Musa Hitar is the Malaysian Minister of Education)

Musa: let's forget about British U's

Students: no more to UK - Government takes tough line over fees increase and Britain's stubborn stand

Switch from British to Canadian U's

Looking for entry into Indian universities?

Envoy: Saudis welcome Malaysian students

Number of students to UK cut by half: Government doubling sponsorship to universities in America

Australia to take in 1500 of our students

In the course of nearly three weeks in Hongkong, there were over a dozen headlines in the *South China Morning Post* referring to Britain's fee policy and the financing of overseas students in Britain.

Both countries have been in the "big league" when one thinks of export of students to Britain. Malaysia, with 15,500 students in Britain in 1978/79 was the largest single sender of students to the UK and Hongkong, with 5,500, was fourth coming behind Malaysia, Iran and Nigeria. But there are interesting differences in the past pattern of flow worldwide from the two places.

How to lose friends and influence abroad

According to Unesco figures for 1976, Hongkong, was in fact just above Malaysia in the overall league table of exporting countries, Hongkong being fourth (behind Iran, the United States and Greece) and Malaysia fifth. Hongkong then had far more students in the United States and Canada, even though it is a British dependency: while in the case of independent Malaysia the overwhelming majority of the students have been coming to Britain until now.

It seems as if any orientation towards Britain will change in the future, unless British policy is changed. Already the signs of a shift are there. At the level of the private student Britain is effectively pricing herself out of the market by the high cost of tuition fees and of living expenses. In both Malaysia and Hongkong the number of educational enquiries at British Council offices about courses in Britain has fallen quite dramatically, while enquiries to other countries have risen. In the first two months of this year for example the number of enquiries at the British Council office in Hongkong had fallen by 40 per cent compared with 12 months ago. By contrast the flow of visitors to the US Institute of International Education office was more than 10 per cent up on a year ago - 8,016 for January, March 1981 as against 6,980 for the same period in 1980. Official figures for the issue of student visas from Hongkong show the UK numbers down from 4,434 in April 1979 to March 1980 to only 2,657 a year later, while the corresponding Canadian figures were up from 2,627 to 4,040.

It is not only the private student but also the official nominee who may be deflected. The Malaysian Government has been so annoyed by Britain's refusal to listen to its case that it has publicly threatened to send no more sponsored students to Britain. While I was in Kuala Lumpur the Minister of Education invited all the agencies sponsoring students to meet him the following week: the student adviser in Washington was to be there, but not the man from London. In Hongkong too, even though the Government sees the necessity for much of the student traffic still to go to the UK because of the similarity of professional structures and has

announced a loan scheme to help Hongkong students in Britain, there is active exploration of alternative possibilities in the States.

Neither Malaysia nor Hongkong can be numbered among the poor countries of the world: indeed both have a record of rising prosperity and continuing growth. There are many individuals and families who can afford the new level of fees and the Governments could also find the money if they were not irritated with British policy and more conscious of possibly better value elsewhere.

What saddens Britain's many friends - and the extensiveness of the British connection through education among senior civil servants and ministers is extraordinarily impressive - is the sense that Britain no longer values the close relationship. Why else should she introduce the policy without consultation? Why else should she turn a totally deaf ear to the representatives of Malaysian ministers or of the Governor of Hongkong. Sir Murray Macleod? What does the dependent status of Hongkong mean if her students are treated as foreigners in the Mother Country itself? Not only that, but the overseas departments of France are treated differently, and - horror of horrors to the people of Hongkong - if Portugal were to become associated with the European Community, students from Macau would pay home student fees while those from Hongkong would be classed as foreigners. Why should students from Germany which fought on the other side in the War be treated more favourably by Britain than those from Malaysia and Hongkong which suffered at the hands of Japan partly because of their British connection? These things cause resentment which is fanned by further anxieties over British racial and nationality policies. Are students with brown and yellow skins unwelcome now in Britain in spite of the

Commonwealth connection?

The appalling press that Britain has received over the full-cost fees issue has not of course gone unreported to London. It is not just the British official representatives who are dismayed by the seeming disregard with which Westminster profitably disposes of one of our greatest assets, the friendship and respect of the intelligentsia of two dynamic countries, but the business community is also critical.

Our competitors from other English-speaking countries are not slow to take advantage of the "gift". British policy has offered them. Several recruitment teams from the United States and Canada have flown in, and there are frequent advertisements and press conferences. For example one enterprising Canadian college, St Columba's in Toronto (a private senior secondary school), has rented a shop in a shopping precinct in central Kuala Lumpur and holds out to would-be clients the prospect of entry to prestigious universities. Fees are 2,600 Canadian dollars for two terms: \$1850 of this must be paid on acceptance and is not refundable. North American and Canadian universities and colleges are also receiving applications from students who have started courses in England, but who now find they cannot continue. Indeed many Hongkong and Malaysian parents have found themselves trapped in a system which itself could do both on an individual basis and through collective action to promote British courses abroad. We are rather feeble amateurs at this and need a much more professional approach. It seems to me that there is an urgent need for Government, the British Council, the higher and further education system and British commercial and industrial interests to devise together an urgent strategy in countries like Malaysia and Hongkong to ensure that Britain retains a sizeable and influential share of the "market". Otherwise future historians will just observe "never was so much (goodwill) squandered in so short a time for so little a cause".

The author is professor of education in developing countries at the University of London Institute of Education.

Peter Williams discovers a hostile reaction overseas to Britain's overseas student fees policy.

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and of occasional unsatisfactory experiences of students flocking to untried institutions.

Nevertheless these experiences are isolated. British institutions should not fool themselves into thinking that all they have to do is sit tight and wait for the what they take to be the evident superiority of their own courses to become clear.

A fundamental realignment of interests is taking place which may be hard to arrest. Much the most powerful means of arresting it would be some modification of British Government policies on the full-cost fee question - not necessarily a return to the *status quo ante* but at least a policy that squarely recognized Britain's interest in the political and economic future of countries like Malaysia and Hongkong and made it possible for more of their young people to come to Britain with British financial help.

This would be as important in psychological as in material terms. For Britain needs to get across the message that we welcome overseas students here. Although Government has said that overseas students are welcome (so long as they pay the full-cost fees) it has done precious little in material terms to help promote knowledge of British courses, or to put across to our prospective customers the idea that Britain has something attractive to offer.

The main vehicle for a promotional effort is naturally the British Council but instead of this service given more funds to help it serve the increasing flow of British academic visitors anxious to tap the overseas market. British Council posts are themselves being cut. At the same time there is undoubtedly more the British higher educational system itself could do both on an individual basis and through collective action to promote British courses abroad. We are rather feeble amateurs at this and need a much more professional approach. It seems to me that there is an urgent need for Government, the British Council, the higher and further education system and British commercial and industrial interests to devise together an urgent strategy in countries like Malaysia and Hongkong to ensure that Britain retains a sizeable and influential share of the "market". Otherwise future historians will just observe "never was so much (goodwill) squandered in so short a time for so little a cause".

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BOOKS

Is there a woman's way of thinking?

Men's Studies Modified: the Impact of feminism on the academic disciplines edited by Dale Spender
Pergamon, £12.50 and £6.00
ISBN 0 08 026770 X and 026117 5

by Janet Radcliffe Richards

Even the least observant among academic male chauvinists must have noticed by this time that the feminist rot is no longer confined to the streets and attics which presumably breed it, but is beginning to spread corruption into perfectly respectable parts of the establishment. At the very least he must be aware that there are far more women around the universities than there used to be, though he may also deny that such latter-day harpies can be dignified with the name of woman. And if he is at all acute he is probably also worrying about the consequent decline in academic standards: he has always known about the way feminine weaknesses vitiate serious academic work, but now that so many journals have blind refereeing policies it is getting extraordinarily difficult to spot them before they appear in print.

However, he may well not yet have realized that the corruption goes far deeper than that. Even the sacrosanct substance of the academic disciplines themselves is suffering. And since he will doubtless want to know more about this, so that the defences may be more effectively manned (sic), he will be delighted to know that a book has just been published which deals with the very subject. It is *Men's Studies Modified*, edited by Dale Spender, and in it feminist academics, in a collection of articles about their several disciplines, tell all.

The all that they tell, of course, is not just a catalogue of uncontroversial fact. It might be relatively easy to reach agreement about the effects which feminism, for good or ill, actually has in practice. But, as you might expect, the authors tend to describe what has happened in their disciplines as a function of what they think ought to happen. And it is on this normative question that most of the interest, and most of the controversy between the feminist and the traditionalist, is bound to centre.

However, what may surprise the uninitiated is that there is also considerable disagreement on this matter among the feminist contributors themselves. This is not a matter which is discussed in the book, perhaps because the differences are not noticed, perhaps because the existence of controversy is taken for granted in feminism, or perhaps because it is not the purpose of the book to enter that particular discussion, but the differences are unquestionably there. And I am particularly struck by one sharp division which seems to me even greater than the divisions which separate some feminists from their patriarchal opposites, and which indicates the real crux of most controversy not only about feminism and the academic disciplines, but about the nature of feminism itself.

Nobody likes trying to define feminism. The movement encompasses far too great a range of opinion to make it easy to pin down many areas of general agreement. But if there is a single root, it must be the view that the position of women in society, the opportunities they are given and the way they are regarded are neither the inevitable consequences of nature nor the result of a wise and benevolent social plan. Women's situation has been brought about largely by men, for the advantage of men, and maintained by a vast array of (conscious or unconscious) devices.

To hold this view is to see that everything which has been asserted or taken for granted in a male-dominated society must be reassessed from its foundations, and the feminist academic is therefore likely to find a good deal of her work differing from that of her non-

feminist colleagues, in two obvious ways. In the first place, she will have new subject matter. She will find it worthwhile to study that which before was dismissed as unworthy of study, or was simply overlooked. And secondly, a related but separate point, she will work on the basis of new presuppositions. So, for instance, if a feminist thinks it even likely that most of the differences between men and women come about as a result of social rather than genetic differences, that suspicion will direct the kind of work she does. While the traditionalist tries to reinforce his position by looking for hormones to guarantee male dominance, the feminist will be watching the behaviour of women playing one day with a toddler in pink called Beth and the next day with one in blue called Adam, and seeing the differences in their treatment of what is in fact the same child. Or she may look at different cultures, to try to find ones with dominant women and passive men. Or she may confront the hormone experimenters directly, looking for mistakes in their collection of evidence, or in the conclusions which are drawn from it.

This is, in effect, the kind of thing which is described by many of the feminist contributors to *Men's Studies Modified*. And what is important about it all is that there is nothing so far to which any well-judging academic could reasonably take the least exception. It is perfectly legitimate to investigate a new subject matter, even though other people may regard it as trivial. And only a few stragglers who still believe that science proceeds by inductive methods can object to researchers who put forward new and unfamiliar theories and see to what extent they can be made to work.

It is for this reason I think that there are certain important matters there

less disagreement between some feminist academics and their traditionalist counterparts than there is between different kinds of feminist. For it is here that we come to the great divide. Although many of the contributors take what is essentially the line I have outlined, others take a much stronger one, which includes all that has been said, but goes far beyond it.

Take Sheila Ruth's article on philosophy, for example. As any feminist will tell you, there is no shortage of patriarchy among philosophers and their output. You have only to look at Aristotle and Aquinas, who thought that a female was a male with various things missing, or Rousseau, who thought that it was worth educating women so that they could be interesting companions for men. There is also a good deal of patriarchy by omission, such as in its somehow not being noticed that women were left out of ideas about the rights of man, even while it was (as it still is) maintained that "man" included "woman". But Sheila Ruth's wish to remove the patriarchy from philosophy extends beyond concern with such matters as these: she wants a feminist approach to the whole of philosophy. And although she is not very specific about what such a feminist philosophy might be - the only really definite suggestion is that feminist philosophers feel no need to be aggressively competitive in discussion, which may be very nice but is hardly discipline-shattering - indications emerge: "In the philosophical establishment, mind supercedes feeling... we extol the rational, split it from the feelings, flee from ambiguity." Feminist philosophy therefore seems to be by contrast that which is sceptical of the rational, puts feelings ahead of it, and welcomes ambiguity.

And, indeed, similar views emerge

in other places. Dale Spender, for instance, has a similarly sweeping view of what it is to bring a feminist approach to academic work, thinking of feminism as tolerant of ambiguity and contradiction, rejecting a traditional "monodimensional" view of reality, seeing no distinction between subjective and objective, and emphasizing the importance of the personal in the production of knowledge. She thinks of feminism as intent on "changing the rules", not just those which apply to content" (as I have suggested is the concern of many feminists) "but those which apply to production".

Now as it happens, I think that many such fundamental views encountered among feminists are quite wrong, or at least - since it is usually possible to discern some glimmer of truth in the background - seriously confused. However, that is incidental. The really important question is why such views, right or wrong, are supposed to count as *feminist*.

If feminism is the kind of thing I take it to be - a determination to end the systematic sex-based injustices from which women suffer, and to expose the mistakes of fact and the fallacious reasoning by which the status quo has been upheld - fundamental theories such as the ones described cannot be feminist, or, for that matter, patriarchal either. The terms cannot apply. This is because, as a matter of logic, all such theories must be formulated before any feminist view can be arrived at in the first place. Whatever view you take about the nature of oppression, for instance - whether you regard it as consisting only in feeling oppressed, or as involving falling short of a standard of justice which is specified independently of any individual's feelings - you must have that view before you can show that women are oppressed. Whatever your theory about the nature of truth and reality, you cannot assess what men have said about women until you have reached that theory.

So, then, why are particular theories of this fundamental kind counted as feminist? Is it just because many feminists happen to believe in them rather than because they are thought to be *essentially* feminist?

I think not. I think they are seen as essentially feminist, and I think also that this is because the women who put them forward as such have a rather different view about the nature of feminism from the one I have put forward. They seem to see it as fundamentally connected with women's ways of doing things: women's ways of thinking, acting and reasoning, and women's views about the way the world ought to be. It is the view that feminism is a struggle not so much of justice against injustice, as of female against male.

This is implied in all sorts of places. Sheila Ruth says about present-day philosophy that "men think, perceive, select, argue, justify malely", implying that a feminist philosophy is one which does all these things femalely. Dale Spender, on the subject of education, is certainly concerned with the sexist attitudes with which children are imbued, but also thinks there are general feminist views about education (involving the abandonment of hierarchies and so on) which she conflates with what women think, or might think, about education. Merilee M. Jenkins and Cheryl Kramer think of language theory in the same way: a "feminist perspective" rejects, for instance, the idea that speech can be seen as a resource which people hoard, because "the metaphor comes from men's activity in, and control of, capitalism, and not from women's interaction".

This view of feminism, clearly implied in the introduction and several of the articles, but not suggested at all in others, is one which certainly rejects, for several reasons.

First, I see no reason whatever to believe that there is such a women's way of going about everything, of any sort. To take it for granted that

there is one seems to be to accept one of the worst parts of the legacy

BOOKS

Workers' politics

European Labour Protest 1848-1939
by Dick Geary
Croom Helm, £11.95
ISBN 0 85664 621 0

Dick Geary does not take his readers through the familiar details of European labour history since 1848, but rather challenges us to re-examine many of the standard interpretations and explanations of its problems, presenting new factual material, have often been content to take for granted or to reiterate. This is a work of synthesis which draws on a wide range of the best secondary sources.

Geary asserts that there is a need to turn attention to labour history away from the leaders and theorists, their ideas and their controversies, and towards the social groups whose attitudes and actions constituted the real labour movement. After an enlightening analysis of pre-industrial and industrial forms of protest, the latter culminating in the formation of trade unions and the organization of strikes, Geary asks why in some places and at certain times industrial protest developed into political organization and action. He rejects the familiar schematic explanations, such as the influence of certain ideologists or the impact of assumed declining living standards. He suggests instead that workers turned to radical politics where and when their industrial action was impeded or frustrated by their opponents' use of political power. Governmental interference in industrial relations could transform what began as economic protest into political action. Similarly, he argues that the degree of overtly revolutionary attitudes expressed by a particular labour movement could depend on the degree of intolerance shown towards it by the other classes. Since an increasingly revolutionary labour movement could also provoke a right-wing backlash, Geary speaks of a "vicious circle in which middle-class attitudes radicalize labour and labour radicalism drives the middle class further to the right".

Turning to the stage of "maturation", that is, the massive growth and institutionalization of labour protest in the period 1890-1914, Geary notes that "skill remained a major determinant of participation in working-class political organization", though some of these organizations at the polls. Most noticeable at the time was the vast increase in the incidence and scale of strikes. But historians have been more preoccupied with the apparent "deradi-

cation" of the political labour movement and its integration into the fabric of capitalist society, culminating in the all but universal patriotism and support for war in 1914. Geary takes the reader through the hoary explanations which have been served up by historians of mass movements - bureaucratization of the socialist parties, growing trade union influence in these parties, participation in parliamentary elections and municipal politics - but argues that the most these can do is to go some way towards explaining the reformism of the labour leaders. As to the rank and file, on which the book tries to concentrate, he pertinently questions the entire case which has been made out for "deradicalization". Nationalism and domestic radicalism were not necessarily mutually exclusive attitudes. The working class had not been uniformly radical at an earlier date; indeed, the postwar schism between social democrats and communists was the continuation of a longstanding ideological conflict which had divided every sector of the movement, trade unionists, intellectuals and party bureaucrats. If the German working class did not embark on revolution before 1914, this was not because it had somehow become "deradicalized", but because in its political isolation it was impotent.

This critical analysis of the pre-1914 working class provides an excellent basis for Geary's approach to the postwar revolutions and the rise of Communism. Having cast serious doubt on the deradicalization of the German working class pre-1914, he has in effect disposed of the historians' favourite explanation for the failure of revolution in Germany after the war. Geary argues that by its impact on the industrial masses, and by the way it undermined the power and prestige of the ruling classes, the First World War had created a revolutionary situation in Germany and Russia alike. Yet the historical situation in the two countries was not identical, and the Bolsheviks in Russia had opportunities for successful revolutionary initiatives which the German revolutionaries simply lacked.

This excellent and searching analysis has put the discussion of some of the fundamental questions of labour movement history onto a new level, and deserves to be widely and attentively read.

Ernst Wangermann

Dr Wangermann is reader in history at the University of Leeds.

W. J. Mommsen is editor of a collection of essays entitled *The Emergence of the Welfare State in Britain and Germany* (Croom Helm, £12.95)

which, taking the two countries as joint pioneers of welfare legislation, considers the influence that each country's policies had on the other.

The Foreign Policy of Hitler's Germany: Starting World War II 1937-1939

by Gerhard L. Weinberg
University of Chicago Press, £26.40
ISBN 0 226 88511 9

Professor Weinberg has written a diplomatic history of Europe in the 1930s leading up to the war of 1939.

It is diplomatic history in the sense that it deals with the relations between governments without much explanation of the internal pressures on those governments and without weighing their potential power; but for the most part it is diplomatic history of the highest quality. In addition to a convincing interpretation of Hitler's foreign policy, Weinberg offers penetrating analyses of the policies of the governments of southern and eastern Europe, including the smaller powers, which he studies with unusual care and attention to detail. He also handles Brit-

ish policy with great skill. He seeks to describe what governments were trying to do in every internationally significant chain of events in this period; he does so by means of careful use of the evidence, eschewing the evasive simplifications which appeal to less conscientious historians. The only major weaknesses are in his discussions of the United States, and especially of France.

Weinberg persuasively restates the view that Hitler intended to conquer living space in the east for German exploitation and settlement. Although the methods and timing for this were flexible, it is argued that Hitler's sense of urgency increased in this period, first because of his recognition that Germany's preponderance of strength was ephemeral without early conquest (the absorption of Czechoslovakia and Austria was necessary to maintain it in the immediate future) and secondly because of Hitler's megalomania about his own health and longevity. Weinberg takes the Hossbach conference in

Social Change and Political Development in Weimar Germany
by Richard Bessel and E. J. Feuchtwanger
Croom Helm, £13.95
ISBN 0 389 20176 6

The Weimar Republic is famous for failure. It was created by an abortive revolution which aroused widespread social fear without changing society. It was humiliated by Germany's foes, and its currency was destroyed by inflation. Finally its inability to cope with economic depression gave Hitler's Nazis their chance to attain absolute power. Historians and politicians in later generations have seen it as an awful example, which must be studied only to avoid its disasters. Perhaps it is time to make a conscious effort to look at the more positive side of the Republic's history; by 1928 its supporters were congratulating themselves on Germany's economic recovery, her growing internal stability and her international rehabilitation - symbolized by her admission to the League of Nations. Given a period of economic calm, might the Republic not strike roots in Germany as a similar institution had already done in France?

It must be admitted that the essays collected in this volume do nothing to encourage an optimistic interpretation. On the contrary, they illuminate the obstacles to Republican consolidation and even uncover some new ones. Richard Bessel provides a sensible introduction, in which he points to the continuity between Wilhelmine and Weimar Germany, a continuity which appeared in political attitudes, social structures and economic relationships. He is surely right when he claims that "Weimar Germany contained a society marked simultaneously by change and an inability to adapt to that change". The fact that large sections of the population were determined not to come to terms with the altered conditions of the postwar world was bound to create political instability. He is less convincing when he describes Weimar's problems as being those of a "mature capitalist society". Some historians argue with conviction that Germany's difficulties arose precisely because she was an immature capitalist society. Pre-industrial attitudes and social elites survived with a tenacity which was not apparent in Germany's western neighbours. In this volume Frank Dormumud's account of the craft trade organizations in Hamburg would seem to reinforce such a view. The craft masters yearned for a return to the days before 1848 and wanted a guild system to replace economic liberalism.

The first of the essays in this volume is a valuable reinterpretation by Wolfgang Mommsen of the German revolution in November 1918. Mommsen describes the various interpretations of the revolution which have been current since the Second World War. He then takes issue with the most powerful tendency in recent scholarship, which

has argued that the Majority Social Democrats under Friedrich Ebert missed an historic opportunity to democratize Germany. They refused to exploit a democratic consensus among the mass of the population, and did not use the workers' and soldiers' councils to carry out fundamental changes in Germany's administrative system. A most persuasive exposition of this view was presented by Reinhard Rüppel in the *Journal of Contemporary History* in October 1968. Mommsen, on the other hand, points out that, although the workers' and soldiers' councils did not present Germany with a Bolshevik threat - as was suggested in the earliest apologies for the Republican government, they cannot really be seen as effective instruments for "democratization". Not only did they themselves not possess the will or the competence to take over important areas of the administration, but they were divided and confused in their objectives - as was the main party of the socialist left, the USPD (Unabhängige Sozialistische Partei Deutschlands). By taking the example of the Ruhr coal miners Mommsen is able to show that radical tendencies in the councils were concerned not so much with providing Germany with a democratic system as with improving their own economic conditions and protecting their jobs. The demands of the miners for workers' control in the pits would have had devastating effects on the German economy, which was already desperately short of coal. Small wonder that they were opposed both by the miners' union leaders and the majority Social Democrats, whose responsibility it was to run the whole economy.

Another contribution of major importance comes from Michael Geyer, who examines the professional attitudes of the officer corps. He challenges the view that an aristocratic mentality, politically alien to the new state, led the army to sabotage the Republic. He argues that the *Reichswehr's* staff officers actually prided themselves on their professional efficiency rather than their social status. It was precisely this "professionalism", however, which eventually brought them into conflict with civilian government.

The *Reichswehr* leadership never seriously accepted the Allied restrictions on the size of the German forces. From an early stage they began to plan for a field army of 63 divisions. Planning was taken seriously, but sectional interests within the army were so powerful that they could not be forced to make sacrifices for the common good: the only solution was the expansion of resources available to the military. Hence Geyer describes two areas in which the military were bound to come into conflict with the Republic. The first was in the attitude towards the SA - Hitler's paramilitary formations - which assumed massive proportions after 1930. These were seen by the army as a valuable pool of reserves at a time when the generations which had

served in the great war were becoming too old for mobilization. The second was in the incompatibility between sound civilian finance and the grandiose requirements of army planning. The fall of Grouner in 1932 - itself a prelude to political changes which really sealed the fate of Weimar - was evidently as much due to fears among the generals that he would not support lavish military expenditure as to his hostility to the SA - though both issues put him at odds with the "professional" views of his staff officers. Geyer argues that this conflict had little to do with the political inclinations of the *Reichswehr* leaders. A "more whole-hearted commitment to the Republic might have dampened the pleasure of some officers" in helping to destroy the Weimar system but it would not have prevented the army from "implementing what the military considered necessary". This intriguing argument is persuasively put. Nevertheless, one wonders whether an army leadership chosen from the ranks of "outsiders" with a political commitment to parliamentary democracy would have been forced into the same choices as those made by Schleicher or Brüning. For instance, the SA was not the only paramilitary formation in Germany: the Republican *Reichsbanner* boasted a large membership, and would have been willing to collaborate with a Republican army. Schleicher and his colleagues wanted nothing to do with them. Dr Geyer, however, is describing the army as it was, and his explanation for its conduct are original and important.

There are plenty of other good things in this volume. One particularly praiseworthy chapter is that by Rüdiger Bock on women in Weimar Germany. While it is untrue that women were more susceptible to Hitler's appeal than men, it is a remarkable fact that many of them voted for a post-NSDAP (Nationalsozialistische Deutsche Arbeiterpartei). Re-echoing enough, Marxist pundits which tried to offer women the most terms of sexual equality, were their successful in winning their votes? Instead women were more likely to choose socially conservative parties, especially if they had overtly Christian characteristics. For this reason the Nazis relatively painless, since the parties they had previously chosen were also anti-feminist in tone, placing more importance on the family than on equality of opportunity for women. Although the Weimar Republic had given them more rights than they had ever previously enjoyed, few of them felt much emotional loyalty to it. In this, as in so many other ways, the politics and society of Weimar were out of step with one another.

A. J. Nicholls

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Where Weimar went wrong



This portrait of an unknown man, which in its original measures 2 1/2 inches by 1 1/2 inches, is by Nicholas Hilliard, whose *Treatise Concerning the Arte of Limning* has been edited by R. K. R. Thornton and T. G. S. Cain and published by Carcanet Press (for the Mid Northumberland Arts Group) at £12.00.

Poverty and failure

Cervantes
by Melveena McKendrick
Hutchinson, £6.95
ISBN 0 316 56054 5

Despite the lasting fame and influence of *Don Quixote*, few readers will be at all familiar with the life of Cervantes. Much of the important biographical research, of course, is in Spanish; Navarrete's "life" of 1819; the documents published by Pérez Pastor in 1902 and, above all, Astrana Marin's monumental seven-volume "life", which appeared between 1948 and 1958. The only reliable biographies in English are James Fitzmaurice-Kelly's *Miguel de Cervantes Saavedra: a memoir*, published nearly seventy years ago, and more recently, in 1973, Richard Predmore's brief *Cervantes*. Melveena McKendrick's new biography is therefore important not merely because it provides the English reader with a full and informative account of Cervantes' life, but because the author is well equipped to relate the man to the historical and literary background of Spain's most glorious age.

Possessing neither noble descent nor influential court connections, Cervantes' life was for the most part, nondescript and unremarkable. The exchequer of the early years of soldiering was soon to become the drab round of civilian life in which, as commissary to the Armada, public tax collector, aspirant poet, dramatist and writer of prose fiction, Cervantes' slide into poverty and failure must have seemed to him as depressing as it was inevitable. The details of his activities went largely unnoticed together from the evidence scattered in public records, letters and his own literary works. Dr McKendrick conceals the difficulties, and the account, especially of Cervantes' early life, is often marked by conjecture. Speculation, though, is rarely less than judicious and Dr McKendrick skillfully weaves fact and intelligent assumption into a highly readable and frequently colourful narrative.

Given the relative unimportance of Cervantes the man, it is curious that he should have been involved in significant moments in Spanish history - as a soldier in the battle

of Lepanto, as a collector of food supplies for the Armada - and that personal disillusionment should coincide with and even reflect national decline. The thread of history is woven firmly into the fabric of this book.

The transition from greatness to incipient decay, from supreme confidence to insecurity and despair, was registered by Cervantes and is echoed in the changing mood and tone of his writings. (page 11)

The events through which he lived certainly helped colour the ironic and sometimes bitter tone of *Don Quixote*, as well as its theme of shattered idealism, and Dr McKendrick gives them due weight and prominence.

The frequent interplay of literary theory and practice in Cervantes' own writing points to his familiarity with the fashions and genres of his age: pastoral, chivalresque and picaresque novel, short story, lyric and epic poetry, comic and tragic drama. Dr McKendrick provides a sound and informative account of the background and offers perceptive opinions on Cervantes' works. It is indeed interesting to observe his reactionary view of the new drama of Lope de Vega when he himself was "to produce a work of fiction, unlike anything that had gone before" (page 108).

As for this work of fiction, Dr McKendrick correctly draws our attention to Cervantes' initial aim in writing *Don Quixote* and to the way in which his age regarded it: "For Cervantes, as for most of the book's readers in the seventeenth and eighteenth centuries, *Don Quixote* was a hilariously funny burlesque; a parody of the romances of chivalry..." (page 217). While she does not deny the influence of many complex factors in the composition of the book, or the rigour of subsequent ages to cast the figure of Don Quixote in their own image, Dr McKendrick is, as always, eminently sensible in asserting (page 220) that "there is no shadow of doubt that Cervantes knew what reality, truth and morality were".

Gwynne Edwards

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BOOKS

Renaissance man

Buchanan
by I. D. McFarlane
Duckworth, £45.00
ISBN 0 7156 0971 8

George Buchanan a genius for being in the most interesting places: in the *Quarier Latin* during the 1520s and early 1530s; in the Bordeaux of the Montaignes; in the Scotland of Mary Queen of Scots and James VI; in the England of Elizabeth I and the moves which were to lead to the United Kingdom. The people he knew form a series of sixteenth-century *Who's Who* - for Scotland, France, Portugal, England.

"The only man of genius his country ever produced": Dr Johnson was baiting the Scots but acknowledging the genius, Henry Estienne II called Buchanan "easily the prince of poets of his century" - Latin poets of course. No small praise with Jonhann du Bellay, Michel de l'Hospital and Beza as contemporaries. McFarlane shares this view; his book shows us why. Anyway, so long as neo-Latin poetry was naturally read for pleasure, it was a standard judgment. Cheap little editions such as the Elzevier *Buchanan's Scoti Poemata* made him readily available.

Narrowly conceived a book on Buchanan might interest a handful of readers; conceived as by McFarlane it should interest almost everyone concerned to understand the sixteenth century. This study is wide, detailed, erudite yet eminently readable, with specialized appendices listing editions, letters to and from Buchanan, books he possessed and so on. Having as its model books with the title of *La vie et l'oeuvre de...* it is perhaps one of the last unadorned books to be conceived in this mould, and is remarkably free from the pedantry that sometimes marks the genre.

McFarlane never forgets that many

who need to read his book will have no Latin - neither as man nor author was Buchanan's influence confined to neo-Latin circles. Buchanan's verse includes satire of the Franciscans, an account of non-Copernican cosmology, and two good tragedies, *Jephthes* and *Rapists*, which blend classical concepts and biblical subjects. His epigrams are particularly interesting (addressed to, among others, Margaret of Navarre, J.C. Scaliger, Mellin de Saint-Gelais, Rabelais's friend Briand Vallée, Guillaume Budé, Roger Ascham). He even had time for Marot's enemy Sagon. His best poetry includes his paraphrases of the psalms. It was Marot and Beza who gave the *Épître Réformée* her psalter. Buchanan's humanist versions attune David's harp to lorraine's lyre. (His twenty-third psalm begins with a fine flourish before reaching "the Lord is my Shepherd" in the third line: *Quid frustra rabidi me pellicis canes*. "What do you vainly want from me, ye mad dogs?")

Famous men born into poor families leave gaps for historians. On some aspects of Buchanan's life, such as his brush with the Inquisition, documents give an adequate account. Where they do not McFarlane faces the problem squarely, filling in background when facts are few; the years in Paris when Buchanan was a student, then a regent of Sainte-Barbe, form such a case. College connections often coloured a man's whole life. Sainte-Barbe was partly Erasmus; its main opponent was the Collège de Montaigu (which Erasmus and Rabelais laughed at). It was as a *Burbiste* that Buchanan and others were invited to the young Collège de Guyenne at Bordeaux. Montaigne was to unlearn his Latin there.

The Bordeaux *Barbistes* formed a splinter-group. With such loyalties Buchanan went to Andrea de

Gouvea's new Colégio in Coimbra, only to have his rector die on him. Diogo de Gouvea, the new rector, was a Paris *Barbiste*; he connived at the arrest of Buchanan and two other colleagues on charges of heresy. Buchanan admitted wavering on vital questions of doctrine and discipline. How he got off so lightly is a matter of wonder. (Even Paris gentry inquisitors could not foresee him as a moderator of the Kirk!) McFarlane has no place for oversimplifications; we are quietly told that Buchanan was "extremely lucky", but we are not given a Protestant parody of the judges, dreadful though the Portuguese Inquisition could be.

Buchanan stares out from the dustjacket of this elegant volume like everyman's idea of a father of the Kirk (even if his scull does resemble a votive candle). But Buchanan was no zealot. McFarlane presents his switch of loyalties away from Mary Queen of Scots and his adopting of pro-English policies as the reasonable reactions of a good, prudent and moral man, who was patriotic but not narrowly so. McFarlane is good at demolishing myths: his Mary Queen of Scots is not the slightest bit romanticized.

McFarlane has clearly read everything relevant. He is as good on Buchanan the man as on Buchanan the poet, the playwright, the controversial historian, the propagandist. He insists there is more to be done: "it will take years of further research to expose myths and fill the gaps". New documents can always turn up, no doubt; if they do, I suspect that though they may complement this excellent book they will not supersede it.

M. A. Screech

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Party lines that cross frontiers

Transnational Party Co-operation and European Integration: the process towards direct elections
by Geoffrey Pridham and Pippa Pridham
Allen & Unwin, £18.00
ISBN 0 04 329032 9

One of the most common criticisms of the first direct elections to the European Parliament in 1979 is that these elections were not European or "transnational" elections at all but simply a series of national elections held within the period June 7-10. Consequently, voters went to the polls to choose candidates from the usual parties that contest elections in their country to represent them in a rather unfamiliar and ill-understood European Community institution, the European Parliament.

But is this the whole story? Were those elected to serve in the European Parliament simply elected to promote and defend a diverse series of national interests? Indeed, given limited powers and its inability to initiate or pass legislation, could Members of the European Parliament (MEPs) be expected to do this? Moreover, as the majority of MEPs are affiliated to the European Parliament's party groups (ranging from Communists to Liberals), would they be encouraged to advance a European Socialist group line, for example, rather than a British Labour Party line?

This book provides answers to some of these questions but is primarily about what steps national parties and the party groups in the European Parliament took to inject a European element into the elections to the European Parliament in each European Community member state. The development of European Community-wide party organizations outside the European Parliament but based on the coalitions of national

parties within the European Parliament's party groups of similar political persuasions is explained.

The creation of such bodies as the European People's Party (comprising Christian Democrats), the Confederation of Socialist Parties of the European Community (Socialist and Social Democrat parties) and the Federation of European Liberals and Democrats (Liberals) was stimulated by the decision to elect the European Parliament. Their function in the elections was to mobilize support for their respective national parties in the member states. They therefore produced literature about the political views and policies of their member parties, election manifestos (where policy conflicts between the member parties were not so acute as to prevent this as in the case of the Confederation of Socialist Parties), posters, badges, and so on.

The authors start from the premise that as a result of direct elections party political integration has become a viable proposition. They perceive a tenuous relationship between national political parties, their respective party groups in the European Parliament and the new transnational party federations. They trace the history of party politics and European integration with reference to the evolution of transnational party co-operation and the party groups in the European Parliament. Notwithstanding national pressures and divisions within the latter, the party groups have been dominant. Allegiance to the group line when voting often overrides differences expressed in plenaries or in committee meetings by members of the same group but drawn from different member states.

Perhaps the most interesting chapter is that dealing with the individual national parties of the nine European Community member states and their effect upon the European Parliament's party groups' politicization between 1974-79 and the develop-

ment of the transnational party organizations. The chapter shows how national party politics developed European Community parties. It does so by evaluating party traditions as a determinant of policies towards the European Community, the domestic political constraints upon parties' transnational political stances, and the "socio-political" factor, the growth of a "European consciousness". Thus the Labour Party's traditional antagonism towards the European Community is believed to explain its hostility to direct elections and to close cooperation with its European Community sister parties.

Finally the authors examine the extent to which the campaign for direct elections stimulated transnational party cooperation. Not surprisingly domestic politics determined the nature of the campaign and inhibited the promotion of transnational links at the national level.

The authors conclude, perhaps too cautiously, that the integrative roles of the party groups and transnational federations lie in their potential rather than their performance and depend on the future political and institutional development of the European Community. For them the development of some kind of European Community party system remains unclear and a long-term prospect.

Throughout the book, the authors take a very cautious line. More speculation would have been welcome, as the historical importance of direct elections for European integration and the European Community's institutional balance, and hence the position of the political parties in it, cannot be overstated. Nevertheless, this is an important book that offers valuable insights, especially on national party effects on European Community-wide party developments.

Juliet Lodge

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Reconstructing Hitler's grand design

The Foreign Policy of Hitler's Germany: Starting World War II 1937-1939

by Gerhard L. Weinberg
University of Chicago Press, £26.40
ISBN 0 226 88511 9

Professor Weinberg has written a diplomatic history of Europe in the 1930s leading up to the war of 1939.

It is diplomatic history in the sense that it deals with the relations between governments without much explanation of the internal pressures on those governments and without weighing their potential power; but for the most part it is diplomatic history of the highest quality. In addition to a convincing interpretation of Hitler's foreign policy, Weinberg offers penetrating analyses of the policies of the governments of southern and eastern Europe, including the smaller powers, which he studies with unusual care and attention to detail. He also handles Brit-

ish policy with great skill. He seeks to describe what governments were trying to do in every internationally significant chain of events in this period; he does so by means of careful use of the evidence, eschewing the evasive simplifications which appeal to less conscientious historians. The only major weaknesses are in his discussions of the United States, and especially of France.

Weinberg persuasively restates the view that Hitler intended to conquer living space in the east for German exploitation and settlement. Although the methods and timing for this were flexible, it is argued that Hitler's sense of urgency increased in this period, first because of his recognition that Germany's preponderance of strength was ephemeral without early conquest (the absorption of Czechoslovakia and Austria was necessary to maintain it in the immediate future) and secondly because of Hitler's megalomania about his own health and longevity. Weinberg takes the Hossbach conference in

November 1937 as signalling that the time for action was near.

So much is familiar. What is much less so is Weinberg's insistence that for Hitler Munich was a setback. He argues that by 1937 Hitler had recognized that Anglo-German conflict was inevitable, and that this explains why he evaded attempts by the British to start negotiations for a general settlement of Germany's public grievances. In 1938, however, Hitler became embroiled in discussion of Germany's publicly stated demands over Czechoslovakia and though reluctant and resentful was compelled, principally by British interference, to accept a settlement which, while dealing with his pretext for attack on Czechoslovakia, left his objects unattained. Weinberg argues that Munich's two effects on German policy were to make Hitler's first priority the preparation for war against Britain and France, and to cause him thereafter to delay stating his grievances in public until their settlement was impossible.

On this interpretation the German negotiations with Poland in the winter of 1938-39 were not intended as preliminary to an early attack on Russia but as a means of securing Germany's rear for an attack on the west. Weinberg emphasizes the anti-British emphasis in German approaches of this period to Italy and especially to Japan. (Hitler's oratorical attacks on Britain after March 1939, both of which damaged Chamberlain's political standing, certainly suggest indifference to British hostility.) When Hitler's failure to enrol Poland as a German satellite caused him to decide to destroy Poland first, he could disregard the risk of a British and French declaration of war because of his agreement with the Soviet Union. Indeed it was convenient to make it seem that the western powers were attacking Germany to prevent the solution of what seemed to many Germans, including non-Nazis, to be real grievances against Poland - thus making them

seem responsible for a war which was in any case determined to fight.

The great problem with such arguments is the lack of evidence about how and why Hitler's decisions were made. Weinberg has found little new material. Like others, he is compelled to infer motives from actions: this he makes much use of *Just Dilemma*, Hitler's "helpful" book on the German navy, an authority since Germany treated cautiously, since Germany's naval policy necessarily involved planning for war with Britain. His main new source for Hitler's thinking is the indirect one of the series of instructions for the German press. Surprisingly the most valuable original research in the book is on British policy in 1937.

This is an excellent and useful book which presents clear and well-documented conclusions on a large number of historical issues.

R. A. C. Parker

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BOOKS

Telling attraction of black holes

Gravity, Black Holes and the Universe
by Iain Nicolson
David & Charles, £10.95
ISBN 0 7153 7849

The Search for Gravity Waves
by P. C. W. Davies
Cambridge University Press, £5.95
ISBN 0 521 23197 3

Iain Nicolson has written a straightforward unpretentious astronomy book about black holes, quasars and all the other fun things that popularizers keep on popularizing.

He starts off with a fairly detailed historical account of the development of ideas in astronomy, gravity and related topics in physics. We then get a competent attempt to explain special and general relativity at the most elementary possible level. I think it would have been better to use more diagrams and fewer words, as is done in Kuffmann's books, but at least what Nicolson says is usually clear and correct. He deals only cursorily with Einstein's twins paradox, which I think is a pity. It deserves more extensive coverage, because to some people it is a real paradox and because its resolution provides an excellent, simple worked example in special relativity.

I found only one obvious error. Nicolson tries to give a simple derivation of gravitational red-shift using the principle of equivalence. If a beam of light is shown vertically upwards from a freely falling elevator, then according to Nicolson "... to a fixed observer looking down the elevator shaft the source of the light will be receding, and so he will receive red-shifted light." The conclusion to be drawn is that light moving upwards through a gravitational

field will be red-shifted. In fact this red-shift would occur in a gravitational field even if the elevator was not receding from the fixed observer at the top of the shaft. It is possible to derive gravitational red-shift using the principle of equivalence, but this requires a non-trivial calculation involving special relativity.

Nicolson manages to avoid getting over-excited about the peculiarities like "other universes" and time-travel that arise from idealized, physically unrealistic solutions of Einstein's equations. He is relatively up-to-date in devoting a complete (but short) chapter to black hole thermodynamics, which is where some of the most exciting theoretical progress has been made.

The longest chapter is on the "practical" application of black holes in theories about X-ray binaries, quasars and other powerful energy emitters that have been discovered in the past 20 years. Nicolson again shows himself to be in possession of the latest information by giving a detailed account of SS433, a rather peculiar stellar object with which many theoretical astronomers have recently been obsessed.

There is a rather pedestrian chapter on cosmology, and the book finishes eclectically with a chapter devoted to alternative theories of gravity, gravitational waves, grand unified theories and quantum gravity. Although it is more up-to-date than its competitors, Nicolson's book is not very exciting. It tends to rely on the usual clichés, such as the balloon analogy for an expanding universe.

Paul Davies's book on the search for gravitational waves is more original than Nicolson's. It seems to be intended for the reader who has a little

knowledge of vectors and calculus, but no knowledge whatever of vector calculus.

Gravitation causes matter to pull together, to condense into a tighter clump, unless this tendency is resisted by some other effect. In Einstein's theory, gravitation is not a force like pressure (as in Newton's), but is instead described using non-Euclidean geometry. Disturbances in the geometry propagate as gravitational waves. The subject is unusual for a semi-popular book: I do not think the public will rush out and buy a book on these (as yet undetected) waves in the same way they presumably rush out and buy books on black holes. This would be a pity because it is a worthwhile book.

Davies begins with a very elementary account of electromagnetism and gives an interesting description of electromagnetic waves in terms of kinks in the lines of force attached to a charged particle whose position has been shifted. The next chapter is on gravity and general relativity, and involves a courageous and I think successful attempt to explain tensors. This is important, because gravitational waves are tensorial in character, and have a deforming effect on matter rather than an accelerating effect, which is the case with electromagnetic waves.

The book progresses logically to a chapter on possible sources of gravity waves: binary systems, neutron stars, black holes and the Big Bang. This is followed by an account of gravity wave detectors, in which the calculation of the gravity wave cross-section of a detector is perhaps a little too technical. This cross-section turns out to be so small that gravity waves are in practice extremely difficult to detect.

The end of the book is something of

an anti-climax. Have gravity waves been seen? Probably not. In 1969 Joseph Weber announced that he had succeeded in detecting gravity waves, but most of his colleagues are sceptical about his results. It is unlikely that there are gravity waves strong enough to be detected by present-day technology, but it should be possible to do so in the very near future. It is important that we go on trying, because the ability to detect gravity waves will open a new window on the universe - and every astronomer has been very surprised by what they have seen. The detection of gravity waves presents a great technical challenge, and the technological spin-off will undoubtedly benefit many areas in science and industry.

It is rather ironic that although we have probably not yet detected gravity waves in our solar system, we have seen an effect which can be attributed to gravity waves outside the solar system. The binary pulsar - a rapidly rotating neutron star orbiting around another small dense object - can have its orbital parameters measured to a very high degree of accuracy. These parameters are changing in a manner which seems to be completely consistent with the emission of gravity waves, as predicted by a linear approximation to Einstein's field equations. This not only seems to confirm the theory of general relativity, it also confirms a mathematical fudge used to make it manageable. It seems that although we have observed the emission of gravity waves, we have not seen the waves themselves - yet.

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Nematology

Introduction to Plant Nematology
by Victor Dropkin
Wiley, £14.00
ISBN 0 471 05578 6

As Professor Dropkin points out in his preface, this book is designed to present "an elementary introduction to plant parasitic nematodes and the diseases they cause". Dealing with his subject systematically, he first provides an introduction to nematode biology, structure and function, which relates the animals' movements to the moisture characteristics of the soil, with particular emphasis on their physiological and behavioural adaptations to the soil environment.

The section on identification begins with a short résumé of the laboratory methods and extraction techniques used in the preparation of nematodes for examination. He does not, however, deal with measurement nor with the necessary criteria for correct identification. After an introduction to the main characteristics of nematodes parasitic on plants, the section then describes the important genera belonging to each family, with brief comments on the plant diseases they cause. References cited in this section are mainly to the Commonwealth Institute of Helminthology's (CIH) descriptions, underlining the excellence of its publications for teaching and research. The illustrations are excellent, with clear labelling.

The chapter on pathology provides a useful overview of the effects of nematodes on plants, including host-pathogen and mechanisms of pathogenicity. Feeding habits in the various genera are clearly described and well illustrated.

Chapters seven and eight describe those diseases affecting the aerial parts of the plant and the roots respectively. It is perhaps unfortunate that these two chapters are separated from the earlier one on identification, as references are again made to the CIH descriptions, which in the biology, identification and effects of nematodes on the host as a whole. However, those two chapters should provide the reader with a full understanding of the diseases caused by plant nematodes. They also briefly describe life cycles and indicate possible methods of control.

Interactions between nematodes and other organisms are dealt with rather cursorily in chapter nine. Certainly, the amount of work done in the past twenty years on virus transmission by nematodes is not reflected in the space allocated to it here, but it is useful to have the known associations between nematodes and fungi tabulated. The sections on genetic resistance and population dynamics are concise, but some of the more recent work on modelling populations of *Globodera rostochensis* could have been included.

The section on nematode control provides a concise description of the methods used in controlling nematodes, outlining the main chemical, biological and cultural methods in use today. In the final chapter, "Prospects for the future", Professor Dropkin rightly emphasizes that, although they are important agricultural pests, nematodes are only part of a complex web of organisms that compete with humanity for a share of the harvest and are therefore only one of several factors to be taken into account when protecting plants.

Although I prefer the approach of the similar text by Jenkins and Taylor published in 1967, Professor Dropkin's well written book is better referenced and better illustrated. It is a useful addition to the literature on plant nematology and will be particularly helpful in teaching undergraduate and postgraduate students.

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BOOKS

Both seen and heard

Parents and Peers in Social Development: a Sullivan-Piaget perspective
by James Younis
University of Chicago Press, £14.95
ISBN 0 226 96484 1

Adult-Child Conversation
edited by Peter French and Margaret MacLure
Croom Helm, £14.95
ISBN 0 7099 0069 4

When the "oversocialized conception of man" was the social psychological orthodoxy, research concentrated heavily upon the correlations between child-rearing practices and later behaviour. Under the weight of theoretical criticisms and the failure to find the expected correlations, attention has been increasingly redirected towards trying to understand the parent-child relationship and interaction, without the presumption that the child is simply the passive recipient of a culture transmitted by its parents. These two books represent two, somewhat different, approaches within this recently evolving perspective.

For fifty years, an alternative to the "oversocialized" orthodoxy has been consistently advocated by the late Jean Piaget and his followers, who have steadfastly maintained that above all else the child must not be seen as passive, but rather as an active participant in its own development. Although Piaget's influence has been profound in some areas of psychology, it has been attenuated in social psychology, because, despite his seminal early work on moral development, he concentrated his attention upon cognitive processes.

Fortunately, Younis has redressed this balance somewhat by seeking to develop the central notion of Piaget's original work on morality, namely the distinction between heteronomous and autonomous morality. Claiming to find a synthesis in the work of Piaget and Harry Stack Sullivan, he presents a clear, concise and cogent account of moral development.

Central to the thesis is the asymmetry between a child's relationship to adults compared to the symmetry of its relationships with other children. Adults already know social rules, which they are concerned to convey to their children so as to facilitate the latter's acceptance by others, and, therefore, the appropriate response of the child is to compliance. This "reciprocity by complement" may seem a potent source of cultural influence, but it is inherently limited by the fact that the child cannot fully appreciate why he should behave as he is required to do, other than because it solicits the approval of his parents.

Interaction with peers, on the other hand, is altogether more symmetrical, since peers cannot impose any particular conception of a relationship upon each other; whatever one does can be directly reciprocated by the other. What peers must learn, therefore, is to engage in relationships of direct reciprocity on the basis of cooperation, which they

eventually come to recognize as the principle upon which the relationship is founded and which constitutes friendship. It is out of the active process of relating to their peers that children learn how to participate in relationships which are characteristic of adulthood and entail skills in interpersonal sensitivity, intimacy and trust.

Sandwiched between the exposition and development of these ideas, Younis presents empirical evidence designed to support this model of the distinction between the two types of relationship and the growth of moral maturity out of peer relationships, especially friendship. Unfortunately, this section suffers from a basic confusion about the purpose to be served by this empirical material. It is not, he tells us, intended to test the theory, but only to play a heuristic role, yet both the research design and the presentation of results give the contrary impression. The samples are large, the tasks given to children are superficial, and the results are presented in a series of cryptic quotations and tables, which not only make for tedious but convey little of how children perceive relationships with adults and peers. Compared to Piaget's own account of how children play a game of marbles, for instance, Younis's data can only be described as heuristically impoverished. It would have been better had he presented his data as direct illustrations of his theory, as he expounded it.

The contributors to the French and MacLure collection have a different interest in adult-child interaction, for not only do they focus more narrowly upon conversation, they treat such conversation as a distinct species of discourse, and are, apparently, uninterested in any developmental implications that it might have, despite a section containing the term "developmental" in its title.

The aim, we are told, is to bring to the attention of a wider audience the different perspectives that are currently used in the analysis of adult-child conversation. Research on this subject would seem to be dominated by two main approaches: the linguistic school of "discourse analysis" and the sociological approach of ethnomethodology/conversational analysis. It may be a sociological bias, but from the point of view of the wider audience, the discourse analysts seem, as yet, to have little to say that is of interest. This is because they seem preoccupied with developing a nomenclature for describing conversation. Although this may be a necessary first step to analysis, it seems unnecessary to burden the "wider audience" with either familiarizing itself with the jargon or agonizing about its problems. Perhaps when they have discovered something worth telling us they might then justify their procedures. They might also, incidentally, try putting it in English, instead of such inelegant phrases as "I hope to have foregrounded".

In taking an inductive approach to the analysis of conversations, in

which orderly regularities in the production of talk are isolated and the patterns revealed, ethnomethodologists at least concentrate upon empirical reality and actually tell us something about how adults and children talk to each other. There are interesting papers by Wootton, on how children use address terms like "mum" to solicit replies to their utterances; by Langford, on how parents indicate to children that what they have said is unclear; by Hustler, on how children use the appearance of their own linguistic ineptitude as a strategy for gaining adults' attention; and by Drew, on how adults correct children's speech.

It is all the more regrettable, therefore, that ethnomethodologists seem deliberately to ignore the developmental implications of their own research. Surely, if, as Langford says, adults routinely employ strategies which draw attention to the child's utterances as linguistic productions rather than contributions to a topic, this must be of importance to the development of linguistic competence. However, researchers represented here seem blind to these wider implications.

Although there are considerable differences between the two approaches represented here, both seem to share a dubious methodological position. They both seem to believe that it is possible to recover the meaning of a conversation solely from the analysis of a transcript, which can be described in objectively neutral terms. This is, from what is presented here, patently not so. Discourse analysts' use of the concept of "functions", which is "to exemplify, expand, justify, provide additional information", seems clearly to refer to nothing more than the intentions of the speaker, and when ethnomethodologists refer, for instance, to utterances "designed to invite self-correction", there seems to be an implicit intentionality in this also. Likewise, when people respond to the utterances of others, are they simply reacting to the minute patterns embedded therein, or to their wider perceptions about the identity of the other, the relationship between them, and so forth? Although this problem is acknowledged by several contributors, it is never pursued.

It seems implausible to suppose that the analysis of conversation can be separated from wider psychological processes of perception and cognition or social processes such as role relationships. Indeed, Edwards makes the very interesting point in the final paper in the volume, that conversational sequences between teachers and pupils embody the asymmetry of that relationship. This, of course, indicates the possible continuities between the level of conversation and the wider, developmental concerns of Younis.

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Timely reminders

A revised edition of G. J. Whitrow's *The Natural Philosophy of Time* has been published by Clarendon Press: Oxford University Press at £20. A paperback version is due in November at £7.95. The book provides a comprehensive account of the concept of time and its role in the different sciences, particularly psychology, neurophysiology, biology, physics and cosmology. It relates purely philosophical aspects to the practical aspects of measurement.

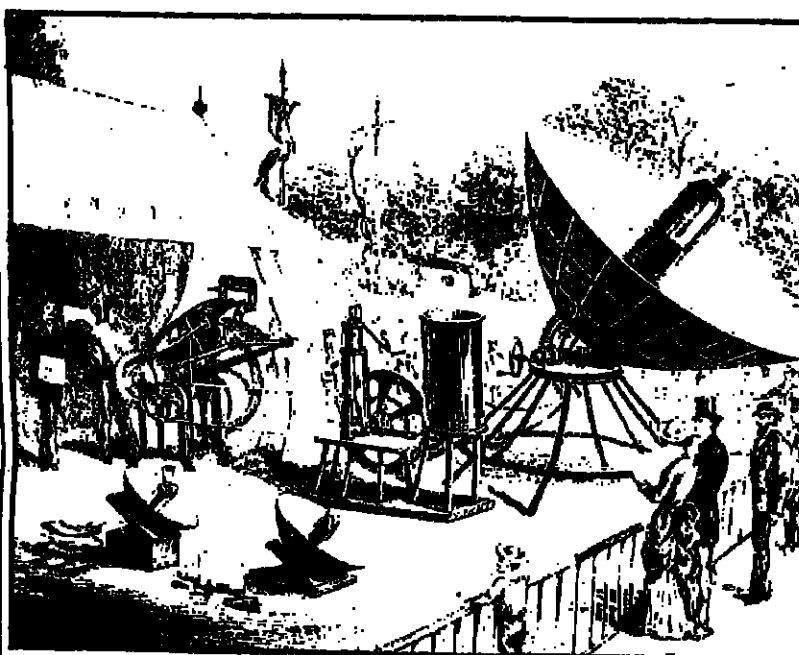
The collected works of Henry Mehlberg (1904-79) on the nature of time and on philosophically pertinent developments of theoretical physics in the twentieth century, have been published in two volumes by D. Reidel, as *Time, Causality and Quantum Theory*, at Dfl75 (paper

32.50) and Dfl65 (paper 30). *Essay on the Causal Theory of Time* provides the first English translation of his classic essays, and *Time in a Quantized Universe* contains his essays on the philosophical foundations of modern physics.

A former student of Einstein, von Laue and Planck, Dr. Roseenthal-Schneider has published material from her conversations and correspondence with them, including some hitherto unpublished views concerning universal constants of nature, concepts of substance and conservation, physical reality, the smallest length, and a personal sketch of their philosophies and personalities. The author also provides an exposition and critique of the conceptions of Eddington concerning the philosophy

of physical science. An introduction, by Albert I. Miller, discusses the intellectual and scientific climate within which these scientists worked during their most productive years, and evaluates the significance of the problems raised in the book. The collection is published as *Reality and Scientific Truth* by Wayne State University Press and is distributed in the UK by the Transatlantic Book Service Ltd at £8.50.

A volume of specialist essays on scientific realism, one of a series arising from meetings sponsored by the Thyssen Foundation, has been published by Cambridge University Press at £12.50. *Reduction, Time and Reality*, edited by Richard Healey, questions the terms in which the debate about scientific realism is usually conducted.



Abel Pifre's solar powered printing press, exhibited in the Gardens of the Tuilleries in Paris in 1880. The solar generator drove the press to print 500 copies of his *Journal Soleil*. Taken from *A Golden Thread: 2500 years of solar architecture and technology*, by Ken Duttill and John Perlin, published in paperback only by Marion Boyars at £5.95.

Molecular geometry

Molecular Shapes: theoretical models of inorganic stereochemistry
by Jeremy K. Burdett
Wiley, £15.75
ISBN 0 471 07860 3

In order to understand chemistry, we must understand molecules. Molecules are made up of atoms, and we therefore need to understand the forces which hold them together. The most surprising aspect of these valence forces are their strength. On the face of it, there seems to be no good reason at all why two hydrogen atoms should combine together so strongly to form a hydrogen molecule: the atoms are electrically neutral and the magnetic and gravitational forces between them are utterly negligible. So what is it that gives the covalent bond its characteristic strength?

The answer to this fundamental question is provided by quantum theory and is of byzantine elegance and subtlety. The powerful attraction that sets in at short range between two neutral atoms is due to "exchange forces", which themselves arise from the utter indistinguishability on this supermicroscopic scale of the electrons which make up the atoms. Exchange forces have no parallel outside quantum theory and so are in principle entirely different from the more familiar electric, magnetic or gravitational forces. Thus, quantum theory enters into the very heart of chemistry. First-year students at Bristol, while still rosy-cheeked and fresh from school, all have to take a five-lecture course on "Quantum Ideas" - though groan they may.

But this is not all. Chemical bonds between neutral atoms are not only very strong, but also show a characteristic directionality: molecules possess shapes. Some may even possess two or more different shapes, and be made to flip over from one to the other. The reasons for the directionality of valence forces are much less well understood, and this is the subject of Professor Burdett's book. It is a theme of interest to all chemists. Some of us go out into the field, so to speak, and examine each speck upon the ground with a large magnifying glass. Burdett, on the other hand, remains at base and tries to fit the intelligence as it arrives into a grand design or rather, into several more-or-less grand designs. Detailed calculations upon individual molecules are not for him: "Chemists by now", he writes, "are fully accustomed to the gloomy rule of thumb that the more exact the quantum molecular calculation, the more obscured by complexity is the physical interpretation."

In general, however, this is a stimulating and thoughtful book from the hand of one who is regarded as a "Young Turk" of inorganic chemistry. The arguments are closely laid out and require corresponding concentration: not a book for a Sunday afternoon in the garden, but altogether a very good read.

Joseph Gerratt

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Geological eclecticism

The Geology of Europe
by D. V. Ager
McGraw-Hill, £16.00
ISBN 0 07 084115 2

About twenty years ago, P. M. S. Blackett (then professor of physics at Imperial College) made an illuminating comparison of scientific methods in the course of a lecture to students of geology. Physicists, he said, tend to know a lot about a little, whereas geologists need to know a little about a lot. Blackett himself, as is the way of great men, transcended his own categories by knowing a lot about a lot and it was the breadth of his vision that turned the magnetometer, that most practical of wartime gadgets, into the instrument that set the Earth sciences off on a new course.

Derek Ager's *Geology of Europe* demonstrates with striking clarity why geologists have to know a little about a lot. The Earth is a large planet with a long history. To make sense of it one must deal in large units and long time periods. But one has only to set foot on dry land to realize that there are complexities within a few square kilometres that might take years to unravel; furthermore, these complexities involve physical, chemical and biological problems as well as geological ones. In the face of this dilemma, most geologists either settle happily for the local complexities or make do with a sort of half-world from which the small irregularities have been smoothed out.

The first great virtue of Ager's book is that he does neither. He generalizes boldly enough to highlight the main events and structures, but he does not lose sight of reality as the field geologist sees it. This respect for what can actually be seen is based on experience - he seems to have been everywhere - and it gives the book its distinctive flavour. The conversational style is unpretentious, free from jargon and unusual in conveying both a sense of place and a sense of enjoyment.

In his preface, Ager sets out his intentions: to deal with Europe as a natural entity, following up the evolution of each region in turn from start to finish; to do this from his own

stratigraphical-paleontological viewpoint; and to keep the volume down to readable proportions. He aims not only at students but at all those visiting Europe from outside or travelling within it. In fact, any geologist could find things of interest whatever their origins or specialities.

The regional approach makes sense geologically because it is based on Stille's division of the continent according to the age of the last major orogenic event. The four main parts deal successively with regions stabilized in Precambrian, mid-Palaeozoic, late Palaeozoic and late Mesozoic/Cainozoic times, and the history of each region is followed through from the oldest events forming the basement to the evolution of the youngest Tertiary basins. This scheme allows great tectonic units such as the Variscan belt to be treated as entities and brings out subtle relationships between earlier and later structures. It is excellent for the traveller who finds everything related to a district in a single chapter and gains great force from the many well-designed maps. It is only too troublesome when one seeks for synoptic views of individual systems or eras.

The stratigraphical-paleontological viewpoint provides, perhaps, the best starting point and the author has been remarkably successful in selecting what the non-specialist needs and in suppressing the small change of local formation names and successions. I only regret that he does not give more space to consideration of structure at depth. Some more isopach maps would be welcome; and Ager's geological instincts would probably have served him well in a more extensive consideration of crustal structure. As to how to make space for such additions, I tentatively suggest jettisoning a few maps and some (only a few) of the enjoyable allusions and jokes. Finally, I would have liked a longer index; it is irritating to meet, for example, Whulstorian facies without being able to locate the place bearing an explanation of the term.

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Natural polymers

Polymers in Nature
by E. A. MacGregor and C. T. Greenwood
Wiley, £19.50
ISBN 0 471 27762 2

The past few years have seen enormous advances in our understanding of the biological world, and much credit for this should go to the organic chemists. By showing us how to manipulate biological macromolecules as simple chemicals, they have done the groundwork for recent spectacular advances. Yet, in teaching chemists to work with biological molecules, it is not enough simply to spell out the relevant chemical reactions; the molecules must be set clearly in their biological context. This book, written by chemists for chemists (and biochemists), succeeds admirably on both counts.

On the chemical front, it explains those analytical reactions biochemists use so frequently but understand more rarely - the use of ninhydrin and periodate, for example. It gives useful links with the outside world of industrial chemistry, particularly for polysaccharides, and it details those areas where an understanding of organic chemistry is particularly useful, as in the chemical synthesis of proteins, nucleic acids and even polysaccharides. Yet it does not fall into the trap of over-emphasizing the now less active fields of reaction mechanisms and chemical modification.

On the biological front, second-year and third-year undergraduates will find all they need to know by way of introduction to proteins, nucleic acids and polysaccharides. There is a good preliminary chapter on purification and an evaluation of homogeneity, although the space devoted to CCD and moving boundary electrophoresis seems unnecessary.

The lengthy chapter on proteins has an account of transport proteins (including haemoglobin), enzymes (including allosteric antibodies, nucleoproteins and structural proteins. Nucleic acids are treated just as thoroughly, with

an excellent description of the now so vital nucleotide sequencing techniques. This chapter is well up-to-date on such topics as nucleosomes, introns and helix-destabilizing proteins.

The chapter on polysaccharides is clear and interesting - not an easy task. I fear, however, that some of the diagrams with floating superscripts numbering ring carbons may lead to confusion. I do have two general criticisms of this book. Firstly, there is very little emphasis on one of the most remarkable properties of biological macromolecules, their ability to form transient but highly specific weak bonds with other molecules in the cell. Because of this omission, the reader is left with very little feel for the dynamic nature of macromolecular interactions within the living organism. Surely the unique properties of macromolecules arise not so much from their high molecular weight (as stated in chapter one) but from their weak-bonding potential?

My second criticism concerns the lack of integration throughout the book as a whole. There is no unifying theme, and little attempt to compare one polymer type with another. This is particularly unfortunate as the authors have made a bold and unusually wide choice of "polymers in nature". Their last two chapters give an extremely interesting account of rubber, lignin, and the inorganic silica and carbon polymers. As these make rather strange bedfellows with the biological macromolecules, some integrating device would seem essential. Indeed, there must be many parallels in terms of physical properties, biosynthesis and structure-function relationships that could have been drawn.

However, these are minor shortcomings. This well written and excellently produced book is strong in terms of organic chemistry and comprehensive and up-to-date in terms of biology.

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BOOKS

Discovering the end of the taxonomic rainbow

Phylogenetic Patterns and the Evolutionary Process: method and theory in comparative biology
by Niles Eldredge and Joel Cracraft
Columbia University Press, £18.00
ISBN 0 231 03802 X

Prior to the recent controversy in the columns of *Nature* over exhibitions policy at the British Museum (Natural History), the topic of "cladism" evoked little general interest. The *Nature* correspondence actually drew more attention to the claim that cladists might be crypto-Marxists than to the scientific issues. As the President of the Royal Society has latterly observed, the basic arguments are unintelligible to the majority of scientists. Yet the issues are important and the outcome of the debate over cladism has implications for many comparative outsiders, such as medical scientists, who rely upon biological classifications. In *Phylogenetic Patterns and the Evolutionary Process*, Niles Eldredge and Joel Cracraft provide a comprehensive review of fairly orthodox cladistic philosophy and therefore a useful reference source for anyone wishing to learn more about the subject.

Cladism ("phylogenetic systematics") concerns both the reconstruction of phylogenetic relationships within groups of organisms and the generation of classifications. The philosophy of cladism is in direct conflict with that of the older school of "evolutionary systematics" championed by Simpson, Mayr, Cain and

others, and a resulting power struggle is under way in the biological museums of Europe and North America. (A potential third contender, "numerical taxonomy", after a surge of popularity in the 1960s, has now been relegated to relative obscurity.) Like it or not, the outcome of this struggle will determine the shape and stability of classifications used by the next generation of biologists.

There are two salient features of cladism, both emanating from the pioneering work of Willi Hennig (*Phylogenetic Systematics*, 1966). Concerning phylogenetic reconstruction, Hennig correctly noted that the degree of relationship of any two organisms is not necessarily proportional to the numbers of shared homologous features. Homologous similarities may be retained from an initial ancestral stock (primitive or plesiomorphic similarities) rather than from a later, more specific stock (derived or apomorphic similarities). Only shared derived homologies indicate branching relationships within any group of organisms. This key distinction remained largely unrecognized prior to Hennig. The other salient feature of cladism is the requirement that the classification of any group of organisms should be directly matched to the branching diagram ("cladogram") indicating inferred phylogenetic affinities. In fact, evolutionary systematists can – and should – incorporate the distinction between primitive and derived homology into their theoretical approach. Anything which in-

creases the precision of phylogenetic reconstruction should be welcomed. However, direct matching between relationship hypotheses and classifications is generally unacceptable to evolutionary systematists because this excludes important information and generates cumbersome yet short-lived classifications.

At first sight, the cladistic philosophy is deceptively appealing. It seems to be eminently logical, and Eldredge and Cracraft make much of their "hypothesis-deductive" approach. Increased rigour is supposedly attained by excluding extrinsic data, descriptive phylogenetic scenarios and loose application of the concept of adaptation. Phylogenetic reconstruction is stripped down to the bare bones of cladograms and alternative hypotheses are "scientifically tested" using the parsimony principle. Given the beguiling resemblance between the emergent cladograms and the hierarchical patterns of Linnaean classificatory schemes, it is but a short, seemingly logical, step to match the two and produce "scientifically testable" classifications.

There are, however, major flaws in the web of cladistic logic. First, phylogenetic reconstruction must be a dynamic process, continually benefiting from new data and more effective syntheses. (Most existing phylogenetic reconstructions are based on pitifully limited data.) Classifications, by contrast, must be as stable as possible; they provide the terminology for scientific discourse. (Consider, for example, the implica-

tions of including the genus *Pan* in the family Hominidae (pages 228-9) for the statement: "Striding bipedalism is a defining character of hominids.") Direct matching of classifications to inferred phylogenetic relationships can only increase the already regrettable instability of biological classifications. Greater stability is permitted in the classifications of evolutionary systematists, which merely require that there should be broad compatibility with inferred phylogenetic relationships.

Second, there is no guarantee – despite the apparent increased rigour of cladist methodology – that more accurate phylogenetic reconstruction can in practice be attained. Recognition of "derived homology" often boils down to personal opinion. It is significant that in their section on cladogram construction (chapter two), Eldredge and Cracraft simply present the reader with "highly corroborated" cladograms for the five case-studies considered. The actual data and analytical procedures are barely mentioned; yet surely proof of the reliability of cladogram construction is fundamental to the whole exercise? Further, it is far from clear that doctrinaire procedures such as the rigorous exclusion of "extrinsic" data improve the process of phylogenetic reconstruction. What price a parsimonious cladogram which completely ignores major geographical barriers such as oceans?

Eldredge and Cracraft have ambitiously attempted to provide an all-embracing text for cladism. Discussion of procedures for phylogenetic

reconstruction and derivation of matched classifications is followed by an innovative survey of evolutionary processes above and below the species level. The concept of the "clade", invoked in the "corroboration" of cladograms, is linked to a model of rapid speciation in peripheral isolate populations, and this in turn is developed into an overall concept of distinct macroevolutionary processes.

Although it is true that interactions between species (macroevolution) must involve some principles different from those governing within-species evolution (microevolution), the authors border on mysticism in suggesting that there is a rupture of ancestral continuity when a new species develops. The only specific case of macroevolution mentioned (character displacement), demonstrably involves normal microevolutionary processes within the species involved. Eldredge and Cracraft clearly see their book as a modern replacement for classic texts on evolutionary systematics, such as Ernst Mayr's *Principles of Systematic Zoology* (1969). Yet, for all their apparently impeccable logic, lack of attention to actual biological examples has merely led them to discover the end of the taxonomic rainbow.

R. D. Martin

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Teach yourself relativity

Relativity: the theory and its philosophy
by Roger B. Angel
Pergamon Press, £20.00 and £8.50
ISBN 0 08 025197 8 and 025196 X

Discovering Relativity for Yourself
by Sam Lilley
Cambridge University Press, £17.50 and £7.95
ISBN 0 521 23038 1 and 29780 X

An Introduction to General Relativity
by S. K. Bose
Wiley Eastern, £3.75
ISBN 0 85226 077 6

You too can understand relativity: R. B. Angel and S. Lilley have produced books with the ambitious aim of teaching special and general relativity to readers with absolutely no prior knowledge of mathematics. The first author is writing for philosophers, so that his task is made easier by his assuming considerable intellectual sophistication in his readers; but Lilley has produced, on the basis of a long experience in adult education, a genuinely self-contained tutor for readers equipped only with an ardent desire to know.

Looking more closely at Professor Angel's book, however, I must admit to scepticism over the success of his opening "crash course" in mathematics, where he moves in 40 pages of straight exposition from the basic definitions of sets and functions, through trigonometry, matrix algebra and calculus to the solution of differential equations, giving barely a glance behind to see if the student is following. And the same bravado marks many of his later mathematical sections, such as the exposition of the fundamental transformation equations in special relativity, where the more compressed derivation that I have ever read is sanguinely concluded with the remark "I would like to take a moment to offer my congratulations to every philosophy student who has made the effort to follow and understand the foregoing derivation." This task of the non-mathematical reader is further aggravated by several inconsistencies in notation (such as the vacillation between the use of imaginary and real fourth coordinates), and there are a few regrettable errors in definitions of mathematical terms.

In view of this I cannot recom-

mend this as a book from which the complete mathematical novice could learn the subject without further assistance. The book scores, however, in its main aim of arguing for a particular philosophical position in regard to relativity, an aim to which the author addresses himself with crusading zeal. For him, relativity is "philosophy in the tradition of Plato."

For special relativity his main argument is based on making the distinction between the empirical fact that the basic dynamical equations possess an invariance group; and, on the other hand, the trivial mathematical fact that any set of equations about dynamics can be written in a way that makes no explicit reference to any particular coordinate system. He argues his whole position eloquently by taking up a representative selection of the main philosophical issues in relativity, including the views of Einstein, Eddington, Reichenbach and Poincaré. The arguments are provocative and well worth reading; but I was left wishing that he had taken a little more space to develop his own views in more detail. It was never really made clear, for example, what a "frame of reference" was, if it was not the reflection of a particular measuring procedure.

Lilley's book is stunningly different. Each paragraph is an exercise in which the reader is led to take the next step himself. Moreover, the reader is never expected to master the techniques of the professional mathematician; the author is judging the approaches of both Newton and Leibniz to be too slick for the amateur, has developed his own version of the differential calculus, which I found quite appealing. All the mathematical arguments are painstakingly carried through from first principles using this alternative calculus.

In view of this approach, one could not expect a very extensive coverage of relativity in the space available. He manages an excellent (at times idiosyncratic) presentation of the basis of special relativity, and gives quite a good account of the kinematic part of general relativity, but its role as a descriptive device for representing the observations of physics in terms of curved space-time. His calculus is very well suited to making the transition at this point

from the global length measurements of special relativity to the "infinitesimal" ones used to define the metric of general relativity. In discussing what metric is to be assigned on the basis of given observations (a notoriously difficult topic on which much has been written) he is forced, however, to rely heavily on arguments that only really work in special relativity, through lack of any mathematical machinery for handling geometry in a way that is independent of the coordinates. The problem is that in practice it is not really possible to decide on the metric to be used in a given physical situation without referring to the dynamical side of the theory: Einstein's equations, which explain how matter actively produces gravitational effects by curving the space-time around it; and at this the author can only hint, indeed, in his hints he gets the wrong end of the stick, by misapplying the term "covariant". But none of this detracts from the pedagogical tour de force of his presentation. If you are quite innumerate and want to learn relativity, this is the book.

The fireworks of the two preceding books unfortunately steal the limelight from Bose's book, a straightforward text for first-year postgraduates. Perhaps it was because of this that I found it slightly disappointing. It largely omits discussion of the physical concepts on which the theory is based (four pages cannot in themselves be enough) and by using only the traditional tensor calculus gives little geometrical intuition either. There are, however, a few points that recommend it over other texts: for example, the treatment of spherical stars (involving the Lane-Emden equation) is unusually comprehensive for a book of this size, and the topic of Killing vectors is well handled, without making too heavy a meal out of it. The Kerr metric and cosmology are also covered. Despite a few careless passages, the book is a useful intermediate-level compendium of quite an extensive body of the mathematics of general relativity.

C. J. S. Clarke

C. J. S. Clarke is lecturer in mathematics at the University of York.

Condensed mechanics

Advanced Solid Mechanics: theory, worked examples and problems
by P. R. Lancaster and D. Mitchell
Macmillan, £4.95
ISBN 0 333 24013 8

As their book is aimed at the more advanced student studying the mechanics of materials at first-degree level, the authors have omitted much of the basic background material which would be included in the first year of most courses. The manner of presentation suggests that a primary goal was to produce a condensed text; and this has been achieved by including little discussion and presenting the information almost in the form of expanded lecture notes.

The subject matter is treated mainly through worked examples. This is a sensible procedure in view of the condensed nature of the text but it does require a careful selection of topics. A broad range of problems likely to be experienced by design engineers is covered, illustrating the types of analytical and numerical solution procedures available. Most of the situations dealt with are elastic, although there is some introduction to plasticity. A selection of worthwhile problems to tackle with answers is included at the end of each chapter.

There is no introduction to put the subject matter into perspective and the first chapter ploughs straight into three-dimensional elastic analysis. I would have preferred the transformation equations, equilibrium and compatibility relations, which do not depend on elastic behaviour, to have been presented separately from the elastic stress-strain relations as some students may have difficulty in determining the generality of some of the expressions developed. In addition, the switching which occurs from three dimensions to two dimensions and back to three dimensions could cause complications. Transformation equations for stresses in three dimensions are presented in terms of direction cosines but there are no corresponding expressions for strains.

In chapter two stress functions are introduced. Expressions are developed for elasticity problems involving plane stress and plane strain in cartesian coordinates and some simple examples solved. Modifications required to deal with polar coordinates and axial symmetry are then included. A number of

examples are considered which make use of superposition to obtain solutions to a range of practical circumstances including contact problems relevant to ball and roller bearings and gear teeth.

Torsion of bars of non-circular section is dealt with in chapter three. It is assumed that the reader is already familiar with the simple theory of circular shafts. Warping of the cross-section is allowed for and both open and closed hollow sections are included as well as solid bars. Analogies with two-dimensional fluid flow and membrane problems are discussed. Chapter four covers energy methods. Stable and unstable equilibrium are discussed. The principle of minimum potential energy is used to derive stiffness matrices for rod, beam and triangular elements of relevance to the numerical methods introduced in chapter five. Also, it is shown how Castigliano's theorem can be derived from the principle of virtual work.

Two basic numerical methods of solution of elastic problems are presented in chapter five. These are the finite difference and the finite element methods. Of necessity in a book of this size, the treatment cannot be more than an introduction. However, the basic principles of both techniques are presented and methods of solution indicated.

Chapter six contains an odd mixture of problems. For clarity, some examples dealing with applications of Castigliano's theorem would have been better included in chapter four where this topic was first discussed. Otherwise beams on elastic foundations and discontinuity stresses in cylindrical shells are treated consistently together. Yield criteria are presented briefly in chapter seven. The plastic hinge concept is introduced and yielding through the wall of a thick cylinder considered. The greatest attraction of this book is probably its conciseness. Also the inclusion of numerical methods in the book of this type is advantageous. The able students are likely to find the pace rather rapid and require fuller explanations. Most students will probably need a more elementary text at hand to remind them of the basic concepts which have been assumed.

G. A. Webster

G. A. Webster is senior lecturer in mechanical engineering at Imperial College, London.

NOTICE BOARD

Appointments

Universities

Edinburgh
Readers: S. S. Barnes (science studies unit); A. Bill (architecture); Dr Gillian Brown (linguistics); Dr A. D. Bruce (physics); Dr I. M. Campbell (English literature); Dr E. N. K. Clarkson (English literature); Dr E. R. Cresson (Scottish studies); Dr B. Hays (geology); Dr L. H. Hickey (nursing studies unit); Dr R. E. M. Irving (politics); Dr J. C. McEldowney (literary studies); Dr A. L. Muir (medicine); Dr L. G. Vallini (computer science).

Senior lecturer: Dr T. J. Garton and N. T. Phillips (history); Dr R. D. Dixon and Dr P. M. Smith (botany); Dr J. R. Jordan (electrical engineering); K. R. Khan (public international law); Dr B. M. Lower (chemistry); Dr B. D. Macdonald (psychology); Dr J. D. Macmillan (fine art); Dr E. W. Marchant (fire safety engineering); Dr P. C. Matheson (ecology); Dr A. Robertson and Dr H. M. Wirz (social administration); Dr Shannon (veterinary practice teaching unit); J. M. Simpson (Scottish history).

Liverpool
Readers: M. T. Gibson (medieval history); A. N. Ryan (modern history); G. K. Court (physics); J. C. O'Connell and H. O. Young (zoology); R. E. Howells and W. Crewe (parasitology); W. D. George (surgery); T. Bell (metallurgy and materials science).
Senior lecturers: S. W. Sykes (French); J. L. Murphy (Hispanic studies); J. C. B. Foster (Latin); R. J. Sherrill (computational and statistical science); C. R. C. Paul (geology); P. E. Newman (pure mathematics); P. A. Weightman (physics); A. E. Mussett (geophysics); K. R. McLean (education); D. J. Back (pharmacology and therapeutics); J. H. Bunger (civil engineering); P. A. W. Walker (electrical engineering and electronics); A. Millward (mechanical engineering); K. H. F. Dyson and M. J. Laver (political theory and institutions); H. J. Parker (sociology).

Polytechnics

Sunderland
Professor: Dr John Blackie (staffing); Howard Layfield (resources).

General

Dr R. W. West, reader in education at the University of Sussex, has been appointed to head a major five-year review of the secondary science curriculum to be undertaken jointly by the Schools Council and the Association for Science Education.

Open University programmes July 18 to July 24

Saturday July 18

8.00-1.00 Systems management: human factors and system failures. Systems Interactions (TD342; 2000).
7.00-8.00 The nature of chemistry. Photoelectron Spectroscopy (S304; 2000).
8.00-9.00 Introduction to pure mathematics. Differentiability (M202; 2000).

9.00-10.00 The world of education in Britain. In the Mode (D202; 2000).
10.00-11.00 Mechanics and applied calculus. Modelling Mechanical Vibrations (M252; 2000).
11.00-12.00 Art foundation course. The Second Impression: Christian Art (A101; 2000).
12.00-1.00 One Thousand Years of Land and Sea (A292; 2000).

1.00-2.00 National income and economic policy. The Money Supply Mechanism (D204; 2000).
2.00-3.00 Socialism and modern Britain. The Road to Socialism (A200; 2000).
3.00-4.00 Conflict and stability in the development of the Pacific. A 1700-1790. Coronations of Pacific (A200; 2000).

4.00-5.00 Quantum theory and atomic structure. Quantum Mechanics (A200; 2000).
5.00-6.00 Computer graphics. A Computer Graphics Design (C200; 2000).
6.00-7.00 The Enlightenment. The Noble Savage (A204; 2000).
7.00-8.00 Social economics. The Crisis of the Industrial Revolution (A200; 2000).

8.00-9.00 Genetics. Genetic Manipulation of Wheat (D202; 2000).
9.00-10.00 Psychology. Psychology. Drinking (D202; 2000).
10.00-11.00 The Earth, structure, composition and evolution. The Earth's Structure, Composition and Evolution (A200; 2000).
11.00-12.00 Linear mathematics. Approximations (A201; 2000).

1.00-2.00 History of architecture and design 1900-1950. Gordon Russell and Modern British Craftsmanship (A200; 2000).
2.00-3.00 Persuasion and the Two Worlds. The Persuasion (A200; 2000).
3.00-4.00 Welfare, rights, community work and society. Welfare Rights (A200; 2000).
4.00-5.00 Domestic Violence – The Legal Issue (P772; 2000).

5.00-6.00 The formation of a nation. Romanticism and Religion (A101; 2000).
6.00-7.00 Mathematics. Education course. Foundation Maths II (M101; 2000).

7.00-8.00 Biochemistry and molecular biology. Folic Acid Pathway (S302; 2000).
8.00-9.00 The digital computer. Application of a Dedicated System (T202; 2000).
9.00-10.00 Fundamentals of Law. (U201; 2000).
10.00-11.00 Political and social studies. The North Atlantic Treaty Organisation (A200; 2000).
11.00-12.00 Management and the social sciences. A Hospital School (E201; 2000).

12.00-1.00 Decision making in Britain. Government and industry. The Events of 1972 (S304; 2000).



'Everybody Sucks'. This photograph by Flo Fox is on display in the 'Asphalt Gardens' exhibition at Camden Arts Centre until July 23.

Forthcoming events

The first international conference on tension in performance will be held at Gipsy Hill Centre, Kingston Polytechnic from September 1-4. Its aim is to explore and study the problems of tension and relaxation in performance by means of lectures, workshops, seminars and recitals given by eminent international musicians, performing artists, psychologists and medical authorities. Organized by Dr Edward Ho, head of the Music Centre, and the co-ordinator is Carol Graden, professor of piano at Guildhall School of Music and Drama. Cost around £50, reduction for students. Details from Dr Ho, The Music Centre, Kingston Polytechnic, Gipsy Hill Centre, Kingston-upon-Thames, Surrey.

'Special needs: The FE/IE response', a study conference to be held at the Further Education Staff College, Coombe Lodge, Bagnall, from September 16-19. Its purpose is to bring together those concerned with FE/IE, with the organization and management of facilities, courses and activities to help those who despite physical or mental handicap can benefit from the continuation of their education within the FE/IE sector.

A conference on "Recent developments in the production course" will be held at the University of Exeter from September 16-18. Forms and further details available from Mrs Doreen Collier, British Society for Polytechnic Studies, c/o London School of Economics, Houghton Street, Aldwych, London WC2A 2AF.

"Surviving the 80s", the Southern Science Technology Forum Conference 1981, to be held at Southampton University from September 13-16. Its basic theme will be the challenge of educating for new technologies. Its main objective will be to help education and industry understand each other's problems and to develop plans of action for the future. The event can not only survive the 80s but can grow and prosper. Speakers include Sir Alec Smith, director of Manchester Polytechnic, Professor R. C. Smith, pro vice chancellors of the OU. Further information from Mr John Davies, conference director, Southampton University.

Monday July 20

8.00-9.00 Genetics. Genetic Manipulation of Wheat (D202; 2000).
9.00-10.00 Mathematics foundation course. Conics (M101; 2000).
10.00-11.00 Introduction to electronics. Digital Systems (D202; 2000).
11.00-12.00 The Enlightenment. The Noble Savage (A204; 2000).
12.00-1.00 Business economics. The Crisis of the Industrial Revolution (A200; 2000).

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4.00-5.00 Decision making in Britain. Government and industry. The Events of 1972 (S304; 2000).

Tuesday July 21

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4.00-5.00 Decision making in Britain. Government and industry. The Events of 1972 (S304; 2000).

Noticeboard is compiled by Patricia Santinelli and Milla Goldie

Recent publications

Newcastle-upon-Tyne

£16,200 from the North of England Cancer Research Campaign to support research into the conformational and structural of serum protein-bound sugars in patients with cancer to be conducted under direction of Dr A.W. Skellern.

£41,086 from the MRC to support research into endocrine and metabolic consequences of chronic ambulatory peritoneal dialysis in chronic renal failure under direction of Professor D.M.S. Kerr and Dr B.G. Johnston.

£34,000 from the North of England Cancer Research Campaign to support research into the evaluation of human liver tumour xenografts as models for the evaluation of cytotoxic therapy and immunotherapy being conducted under direction of Dr M.F. Bassendine.

£25,494 to provide further support for research into maternal physiological adaptations during normal and abnormal pregnancy and their relation to fetal growth being carried out under direction of Dr T. Lind.

£19,000 from the North of England Cancer Research Campaign for research into the isolation and nature of the Reed-Sternberg cell in Hodgkin's disease being carried out under the direction of Professor A.E. Sartorius.

£24,443 from the Department of Environment to support the project entitled Publication of Explanatory Leaflets on the Environment for the public, under the direction of Professor R.A. Harrison.

£40,217 from the SRC for research on the function of descending brain neurones of the locust, under Professor Dr P.J. Simons.

objective will be to help education and industry understand each other's problems and to develop plans of action for the future. The event can not only survive the 80s but can grow and prosper. Speakers include Sir Alec Smith, director of Manchester Polytechnic, Professor R. C. Smith, pro vice chancellors of the OU. Further information from Mr John Davies, conference director, Southampton University.

"Investing in Management Development", a working conference for managers, organized by the Centre for the Study of Management Learning, will be held at the University of Lancaster. The conference aims to discuss questions as whether investment in management development is worthwhile and what is its value. Further inquiries to Richard Boot or Michael Reynolds, Centre for the Study of Management Learning, Gillow House, Lancaster University, Bailrigg, Lancaster.

The development of instruments and their use in the development of the Plan (A204; 2000).
18.00 The revolutions of 1848. Spring of Nations – France (A201; 2000).
18.00 Making sense of society. The Group (D101; 2000).

18.00 Management and the school. Leisure: A Hospital School

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To place your advertisements write to:
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Inn Road, London WC1X 8EZ.
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Monday 10.00 am in the week
of publication

Universities

The Librarian

The post of University Librarian will become vacant on 1 April 1982 upon the retirement of Mr. R. F. Eatwell.

The University Council intends to proceed to appoint a successor during 1981, and invites applications from graduates with professional qualifications and considerable experience. The appointment will be on Grade IV of the national salary structure for Senior Library Staff.

Copies of the Further Particulars for this appointment may be obtained from the University Secretary (JA), University of Surrey, Guildford, Surrey, GU2 5XH, or by telephone, Guildford 71281, Ext. 616. Applications in the form of a curriculum vitae, together with the names and addresses of three referees, should be sent to the same address by the 7th September 1981 quoting reference 42 THES.

UNIVERSITY OF SURREY

Applications are invited for Post-doctoral Fellowships available in any Department of the University. The academic activities of the University are grouped under the following faculties and schools. Opportunities for study and research are available in the following:

AGRICULTURAL AND HORTICULTURAL SCIENCE—Agricultural Economics and Marketing; Farm Management; Agricultural Engineering; Agronomy; Animal Science (Dairy, Sheep, Beef, Pig); Horticultural Sciences and Plant Health; Poultry Science; Soil Science.
BUSINESS ADMINISTRATION—Agricultural Business; Business Studies and Business Law; Data Processing; Economics; Financial Management and Accounting; Personnel Administration.
FOOD SCIENCE AND BIOTECHNOLOGY—Food Technology; Biotechnology (i.e. processing of Biological Materials); Industrial Management and Engineering; Industrial Management and Industrial Mathematics.
HUMANITIES—English; History; French; German; Philosophy.
SCIENCE—Biochemistry; Biophysics; Botany; Chemistry; Genetics; Microbiology; Zoology.
SOCIAL SCIENCE—Computer Science; Economics; Education; Geography; Mathematics; Psychology; Regional Planning; Social Anthropology; Sociology; Social Work; Statistics.
VETERINARY SCIENCE—Physiology and Anatomy; Veterinary Pathology and Public Health; Clinical Sciences.

Information concerning the research activities of the departments associated with these groups are given in the University Calendar. intending applicants are advised to write to the Head of the appropriate department in the course of preparing an application.

The Fellowship will be for one year, with possible extensions, and carries £22,205 toward return fares.

Further details of the position and of the University, together with conditions of appointment and information to be supplied by applicants, may be obtained from the Association of Commonwealth Universities (ACU), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.

Applications close on 18 August 1981.

NEW ZEALAND UNIVERSITY OF OTAGO DUNEDIN, NEW ZEALAND

TEMPORARY LECTURER IN MICROBIOLOGY

Applications are invited from graduates with a B.Sc. or equivalent for a temporary position as Lecturer in Microbiology. This is a one-year appointment, renewable for a second year. The salary scale is £11,000 to £13,000 per annum.

The successful candidate will be expected to teach and supervise students in the following fields: bacteriology, virology, immunology, and parasitology. The successful candidate will also be expected to contribute to the research programme of the Department.

Further particulars are available from the Association of Commonwealth Universities (ACU), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.

Applications close on 31 August 1981.

UNIVERSITY COLLEGE OF SWAZILAND

LECTURER IN ECONOMICS

Applicants must have at least a Master's degree in Economics plus some teaching experience, and preferably some research experience in developing countries. The successful candidate will be expected to teach and supervise students in the following fields: microeconomics, macroeconomics, and development economics. The successful candidate will also be expected to contribute to the research programme of the Department.

Further particulars are available from the Association of Commonwealth Universities (ACU), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.



Applications are invited for the following posts, for which applications close on the 1st September 1981.

LECTURER IN ARCHITECTURE

The position involves teaching in Design in the School and contributing to teaching in Urban Design and the History of Architecture.

Applicants should be architects with qualifications in Urban or Landscape Design or Architectural History and Theory. Practical experience in the profession is essential.

The position is expected to be filled by a graduate with a B.A. or equivalent, capable of leading to a Ph.D. and able to undertake research in the field of Architecture.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Sydney, Sydney, New South Wales, Australia.

Applications close on 31 August 1981.

MAQUERIE UNIVERSITY SYDNEY

LECTURER IN COMPUTING

The successful candidate will be a member of the computing group and will contribute to its teaching and research activities. A higher degree and research experience in the field of computing are essential.

The computing group provides courses for undergraduates and a Master's degree by coursework and project in the field of computing. The successful candidate will be expected to teach and supervise students in the following fields: computer science, software engineering, and systems analysis.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Macquarie University, Sydney, New South Wales, Australia.

Applications close on 31 August 1981.

UNIVERSITY OF MELBOURNE

LECTURER (CONTINUING) — DEPARTMENT OF CHEMICAL ENGINEERING

Applicants for this position should possess a higher degree in Chemical Engineering (or related disciplines) together with appropriate research and teaching experience. The successful candidate will be expected to teach and supervise students in the following fields: chemical engineering, process engineering, and systems analysis.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Melbourne, Melbourne, Victoria, Australia.

Applications close on 31 August 1981.

BRISTOL UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

Applicants must have at least a Master's degree in Economics plus some teaching experience, and preferably some research experience in developing countries. The successful candidate will be expected to teach and supervise students in the following fields: microeconomics, macroeconomics, and development economics.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Bristol University, Bristol, Avon, England.

Applications close on 31 August 1981.

EDINBURGH UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

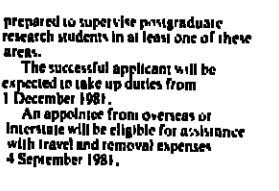
Applicants must have at least a Master's degree in Economics plus some teaching experience, and preferably some research experience in developing countries. The successful candidate will be expected to teach and supervise students in the following fields: microeconomics, macroeconomics, and development economics.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Edinburgh University, Edinburgh, Scotland.

Applications close on 31 August 1981.

LEICESTER UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS



Applications are invited for the following posts, for which applications close on the 1st September 1981.

LECTURER IN ARCHITECTURE

The position involves teaching in Design in the School and contributing to teaching in Urban Design and the History of Architecture.

Applicants should be architects with qualifications in Urban or Landscape Design or Architectural History and Theory. Practical experience in the profession is essential.

The position is expected to be filled by a graduate with a B.A. or equivalent, capable of leading to a Ph.D. and able to undertake research in the field of Architecture.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Sydney, Sydney, New South Wales, Australia.

Applications close on 31 August 1981.

MAQUERIE UNIVERSITY SYDNEY

LECTURER IN COMPUTING

The successful candidate will be a member of the computing group and will contribute to its teaching and research activities. A higher degree and research experience in the field of computing are essential.

The computing group provides courses for undergraduates and a Master's degree by coursework and project in the field of computing. The successful candidate will be expected to teach and supervise students in the following fields: computer science, software engineering, and systems analysis.

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UNIVERSITY OF MELBOURNE

LECTURER (CONTINUING) — DEPARTMENT OF CHEMICAL ENGINEERING

Applicants for this position should possess a higher degree in Chemical Engineering (or related disciplines) together with appropriate research and teaching experience. The successful candidate will be expected to teach and supervise students in the following fields: chemical engineering, process engineering, and systems analysis.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Melbourne, Melbourne, Victoria, Australia.

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Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Bristol University, Bristol, Avon, England.

Applications close on 31 August 1981.

EDINBURGH UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

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Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Edinburgh University, Edinburgh, Scotland.

Applications close on 31 August 1981.

LEICESTER UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS



Applications are invited for the following posts, for which applications close on the 1st September 1981.

LECTURER IN ARCHITECTURE

The position involves teaching in Design in the School and contributing to teaching in Urban Design and the History of Architecture.

Applicants should be architects with qualifications in Urban or Landscape Design or Architectural History and Theory. Practical experience in the profession is essential.

The position is expected to be filled by a graduate with a B.A. or equivalent, capable of leading to a Ph.D. and able to undertake research in the field of Architecture.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Sydney, Sydney, New South Wales, Australia.

Applications close on 31 August 1981.

MAQUERIE UNIVERSITY SYDNEY

LECTURER IN COMPUTING

The successful candidate will be a member of the computing group and will contribute to its teaching and research activities. A higher degree and research experience in the field of computing are essential.

The computing group provides courses for undergraduates and a Master's degree by coursework and project in the field of computing. The successful candidate will be expected to teach and supervise students in the following fields: computer science, software engineering, and systems analysis.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Macquarie University, Sydney, New South Wales, Australia.

Applications close on 31 August 1981.

UNIVERSITY OF MELBOURNE

LECTURER (CONTINUING) — DEPARTMENT OF CHEMICAL ENGINEERING

Applicants for this position should possess a higher degree in Chemical Engineering (or related disciplines) together with appropriate research and teaching experience. The successful candidate will be expected to teach and supervise students in the following fields: chemical engineering, process engineering, and systems analysis.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, University of Melbourne, Melbourne, Victoria, Australia.

Applications close on 31 August 1981.

BRISTOL UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

Applicants must have at least a Master's degree in Economics plus some teaching experience, and preferably some research experience in developing countries. The successful candidate will be expected to teach and supervise students in the following fields: microeconomics, macroeconomics, and development economics.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Bristol University, Bristol, Avon, England.

Applications close on 31 August 1981.

EDINBURGH UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

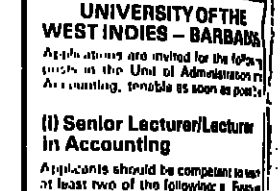
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LECTURER IN ECONOMICS



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Applications close on 31 August 1981.

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Applications close on 31 August 1981.

LEICESTER UNIVERSITY OF SOCIAL SCIENCE

LECTURER IN ECONOMICS

Universities continued

LONDON UNIVERSITY OF ECONOMICS AND BUSINESS

CHAIR OR READERSHIP IN POPULATION STUDIES

The Senate invites applications for the above post. The level of the post is that of a Senior Lecturer. The successful candidate will be expected to teach and supervise students in the following fields: demography, population statistics, and population policy.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, London University, London, England.

Applications close on 31 August 1981.

NEW ZEALAND UNIVERSITY OF TECHNOLOGY

LECTURER IN PHYSIOLOGY

Applicants are invited to apply for the above post. The successful candidate will be expected to teach and supervise students in the following fields: physiology, anatomy, and biochemistry.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, New Zealand University of Technology, Auckland, New Zealand.

Applications close on 31 August 1981.

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Applications close on 31 August 1981.

WELLINGTON UNIVERSITY OF TECHNOLOGY

LECTURER IN ARCHITECTURE

Applicants are invited to apply for the above post. The successful candidate will be expected to teach and supervise students in the following fields: architecture, design, and construction.

Applicants should send a curriculum vitae, together with the names and addresses of three referees, to the University Secretary, Wellington University of Technology, Wellington, New Zealand.

Don's diary

Monday

Drive through desert-like ground into town to the temporary site. It's the rainy season but after a good start, no rain for a month and crops have died. Farmers must largely start again when the rain re-starts. Usual departmental staff meeting. We are expanding so rapidly that my office is hardly large enough. No major problems so we soon disperse.

Read through papers again for Senior Staff Establishment Committee meeting scheduled for 11 a.m. Sixty-seven staff to be considered for promotion rather different from U.K. universities. The vice-chancellor has not returned from recruitment tour so meeting delayed until 12 noon, then postponed. Decide to risk visit to Kaduna tomorrow so driver fills tank and jerry-can ready for early start.

Ve has asked me to draw up possible plans for changes to the university year so spend some time on that. Evening spent marking exam papers and a third year research project.

Tuesday

Leave at 7.15 am, with my wife. We notice an increase in greenery after 50 kms. Hit tremendous tropical storm after 250 kms, road soon awash - it is safer to press on or to park? We press on. A break in clouds, a hasty snack at Zaria then on to Kaduna 480 kms and five hours of driving, but one soon gets used to these long distances in Nigeria.

It's rained for the last 150 kms and Kaduna is green. All hotels are full, there's a conference in town, but we've arranged to stay with friends.

Go to the National Teachers Institute. I've edited 18 units of distance-learning materials for up-grading primary school teachers, all I could promise before my leave. I've 12 left to do to complete my half of Cycle 1. Universal Primary Education will fail unless more teachers are trained and distance learning appears to be the only possible solution to an enormous problem.

Catching up on news from our friends, who have been on leave. Pass the evening very pleasantly.

Wednesday

Early to NTI, where my units have been read and will be prepared for printing. As I'll be on leave at the time of the next workshop can I advise on how it should be organized and which writers should be invited? I'm put under pressure to edit more units before I go on leave so I eventually agree to do six more but wonder why I take on such jobs.

Off to the tie-dye shop to buy presents for friends. Surely my wife has enough dresses - well perhaps one more! Then it's the supermarkets or gold, and the supermarkets win. No bacon, sausages, cheese but there's butter, even if it is £2.20 per lb. Decide against marmalade at £3.40 a jar. I manage to exchange my crate of empties for a crate of tonic, more difficult to get than the gin it's to accompany. Why is it that alcohol has become more plentiful since Sokoto State was threatened with "dryness"?

Dinner is interesting with people who've lived in Nigeria for more than 20 years.

Thursday

Pick up some units from NTI, then away by 9 am to be back before offices close. We do it in five hours, and are happy to be back to the friendly greetings in Sokoto. A letter from our son in school in England - good, a stack of official mail - not so good, includes 20 applications for posts in the faculty, eighteen of them from the Indian sub-continent, but I'm trying hard to recruit Nigerians. Audio-visual equipment from Britain has arrived, but I later discover that four packages are missing, worth

£3000, lost or stolen in Kano.

Drinks in the evening with the Acting British High Commissioner, visiting from Lagos, 20 British residents of Sokoto turning up. Round to David's later to talk about it. He's got the latest *THES*. I decide Thatcher looks as unattractive from here as she does at home. Is she trying to destroy the universities? We've also heard she's to cut BBC Overseas services - is she also trying to destroy British influence abroad?

Friday

Bill the examinations officer brings material for the external examiner's visit and I make sure 'domestic' arrangements are ready. There's no problem with first semester material but some second semester papers are still being marked.

Steering committee on science teaching workshop meeting at 10 am. A head of department has complained of our criticisms in the report on the last workshop, and we decide to tell him not to confuse personal feelings with professional judgments.

I hear that the Presidential commission looking into the universities will report shortly. They'd better - salaries have been frozen for five years whilst the cost of living has more than doubled. It is the Moslem Sabbath so we close early.

At 3 pm the storm breaks. The rain is wonderful till it comes through the roof in three places. I spend an hour mopping up till the electricity fails, which makes me think again about a generator.

At the College of Education club in the evening there is free food to use up the bar profits. Sitting outside on a starlit night makes us realize there are compensations here and we stay until 1.30 am.

Saturday

Bala the driver's room has been flooded in the storm, so I give him the day off - no joke when your bed and clothes are soaked. I drive to the airport to meet our external examiner, an ex-dean of education now a vice-chancellor. He was a great help last year and it's good to see him again. Everything is handed over to him and off he goes to the Chancellor's Lodge - but it's locked up, even after checking the arrangements yesterday. I take him home till the place is ready and I'm relieved he's such a pleasant chap.

Looking round the large garden surrounding our very pleasant bungalow I collect a few guavas and pawpaws and estimate the eucalyptus trees have grown 25ft in 20 months.

We decide to have a small dinner party for the external examiner on Sunday so I drive 12 kms to the university's permanent site to invite a Nigerian colleague. Site area is 21.7 square miles! We are hoping to move the faculty of education into the first completed building there in October.

Sunday

As usual, start the day listening to 'The Pleasure's Yours' on BBC Overseas Service, then into the garden before it gets too hot, to cut down the oleanders and hibiscus. Sokoto has 10 months of the year hot and two very hot! Down to the club for an hour in the pool before lunch, fortunately finding it hasn't been drained this weekend.

I spend the afternoon on the latest NTI units.

Another storm greets guests arriving for dinner, but a very pleasant evening. Electricity fails three times and is restored twice, eventually staying off for nineteen hours - we must get a generator.

G. Stan Smith

The author is dean of the faculty of education at the University of Sokoto, Nigeria on secondment from the University of York.

Union view.

Emergency, but no sense of urgency

To say in July 1981 that three million unemployed is a moral and political disgrace, not to mention a tragic waste of human resources, is hardly controversial. But what really shocks the system is that this Government remains steadfastly unwilling to consider any emergency solutions to alleviate the crisis.

Toxtheth, Brixton, Moss Side and countless other places have erupted into violence, chiefly aggravated by the desperate frustration of young people consigned to the dole queue by an economic theory. And yet still the Government blandly repeats that there is no alternative to the present course.

Others have been all too willing to bring out their pet theories, ranging from the "get their hair cut, two years in the army" brigade through to ideas of a compulsory national community service. Non of these panaceas has any hope of success if they are preferred on the basis of the current monetarist mentality, running around in ever decreasing circles until it eventually disappears up its own dogma. And any solution which does not allow for participation by young people themselves - employed and unemployed - is doomed from the start.

Rather than repeating crass dogma, the Cabinet should acknowledge the reality of what is happening on the streets in Britain today and look for an alternative to the present nightmare. Mrs Thatcher should say: "We have seen the homes and communities in which you live, we know how many of you have no jobs to go to each morning, and we understand that racist groups are seeking to stir up violence between white and black people - and we are committed to finding the alternative." And such an alternative to mass unemployment and social decay must involve everyone who has to live and work in Britain during these times - young people, trade unions, church groups,

in fact, even my mother if she has something to say.

We in NUS believe that we have our contribution to make in the search for the solution to widespread youth and general unemployment. Unlike Mrs Thatcher, we are convinced that there is an alternative, but, critically, we do not believe our view is the definitive or exclusive



Answer. Although for us, the alternative includes such apparent *beats noires* as increasing the overall job market through public investment; it means providing genuine educational access rather than paper principles (and here I am talking about physical resources, teaching and ancillary staffs, mandatory awards for further education students etc). Our attitude is that the education system should be developed to

meet the needs for ordinary people, living in society, rather than what those in power deem appropriate. In short, when it comes to the time of choice, prior to leaving school, young people should be offered genuine options for their futures whether in post-school education, training schemes or full-time employment. It is around these goals that NUS, local student unions and other young peoples' organizations will unite to protest if there remains no alternative.

Twenty thousand of our members graduated into the dole queue this summer, and even those represented just the tip of a growing iceberg which conceals over half a million young people deprived of meaningful work. And if this Government does not act rapidly, they will no longer be faced with the traditional lobbies of Parliament protests but a depth and intensity of violence across the country that none of us really wants.

Douglas Herd

The author is national secretary of the National Union of Students.



Flashpoint on Britain's streets: a blazing car in last week's riots

Science in America

Eye of Texas reflects the biggest image



Clive Cookson

The United States is spending \$750m on the Space Telescope which is due to go into orbit aboard NASA's space shuttle some time in 1983. Located above the obscuring haze of the earth's atmosphere, the instrument should be able to see seven times further into space than the largest ground-based observatories - perhaps even to the edge of the universe.

Astronomers are, not surprisingly, more impatient for the Space Telescope to go into action than they have been for any other observatory in history. (The project is already a couple of years behind schedule, as a result of delays in the shuttle's development.) But no single telescope, however wonderful, will satisfy their desire for bigger and better instruments.

So there are several moves afoot in the United States to build huge new ground-based optical telescopes with reflecting mirrors considerably larger than the two existing giants,

the five-metre Hale Telescope on Mount Palomar, California, and the six-metre Soviet instrument in the Caucasus. Although they will not be able to give as clear images of distant stars as the pollution-free Space Telescope, they should "catch" much more light than its smaller 2.4-metre mirror (whose shaping and polishing have just been completed by the manufacturer, the Perkin-Elmer Corporation). The sheer quantity of light is more important than perfect resolution for some astronomical purposes such as spectroscopic analysis.

The University of Texas and University of California are furthest ahead with plans. The Texas proposal is for a 7.6-metre telescope - already nicknamed the Eye of Texas - to be installed on a remote 6,600-foot mountain at the university's McDonald Observatory in the west of the state. The sky there is almost free of the man-made "light pollution" that is interfering with many observatories closer to towns and cities.

Shaping a single conventional mirror 7.6 metres across would be a prohibitively difficult and expensive undertaking, because the glass would need to be more than a metre thick to support its own weight. Even if such a mirror could be made, it would probably not perform well, judging from the troubles Soviet astronomers have had with their six-metre reflector. The main problem is that such thick glass is almost always out of equilibrium with the temperature of the surrounding air, so its shape and the images it produces are distorted.

Therefore the Eye of Texas has been designed with a novel "thin mirror". It consists of a flexible sheet of fused silica, about 20 centimetres thick, support from behind by an electronically controlled system of movable pads. A computer will maintain the correct shape.

Another cost-saving design feature is the telescope's extremely short focal ratio; the instrument is only twice as long as it is wide and it therefore requires only a small dome. Nevertheless the estimated price tag is still \$45m. The university hopes to raise the necessary funds from individuals, companies and foundations within the state - appealing to their Texan pride to help build the largest single-mirror telescope in the world.

The University of California design would provide the equivalent of a ten-metre reflector, at about the same cost as the 7.6-metre Eye of Texas. It is not a single mirror but consists of 36 separate hexagonal glass tiles, each about two metres across, glued together into a parabolic mosaic. Again, a computer would control its precise shape.

The UC instrument could not be called the Eye of California, even if the more modest people of that state had wanted to, because a site has been identified for it in Hawaii, on an extinct volcano called Mauna Kea. The availability of facilities for its construction remains uncertain, however, though the university has spent several hundred thousand dollars on design work.

Whether the US government will be prepared to commit federal funds to a giant new optical instrument remains to be seen. An important influence will be a report, due to be released very soon by the National Academy of Sciences, recommending priorities for American astronomy over the next ten years.

The academy's Astronomy Survey Committee, chaired by George Field, director of the Harvard-Smithsonian Centre for Astrophysics, is expected to include on its priority list a ground-based 15-metre telescope, to be built perhaps during the late 1980s or early 1990s. But two other grandiose projects favoured by the American astronomical community - a satellite carrying an advanced X-ray observatory, and a constant array of radio-telescopes across the United States - may be recommended too. And there is unlikely to be funding for all three.

LETTERS TO THE EDITOR

Spending cuts and the role of the UGC

Sir, - There are many points that could be made in response to your leading article on the UGC letter (*THES*, July 10); let me draw attention simply to two. Firstly, even if the degree of selectivity demanded by the UGC in the implementation of the government cuts is correct - which I would dispute - how can it be defensible to attack a small group of universities so savagely that their morale is inevitably shattered and their long-term future repeatedly called into question, as once again in your own editorial?

Secondly, while you are right to note that the cuts originate from the Government, the "subjective judgments about priorities" derive from the UGC itself, and it is on these judgments that we must focus our attention. It has been repeatedly pointed out critically in the national press that the UGC contains no members from any of the institutions most adversely affected by its proposals; this alone must cast doubt on whether the basic requirements of natural justice may have been met. I would like to put to you one specific case - just one of many I could cite - which further increases your doubt.

The department of modern languages at Salford University, the first applied language course at university level in the country, is outstandingly successful at attracting talented sixth-formers, at providing them with an education which combines oral fluency in two or more European languages with a detailed knowledge of the countries in question, and at placing its highly competent graduates widely in language-related jobs, where they put their skills into practice, very often in the wealth-creating sector of the economy.

This year the department received nearly 700 applications for its 80 places, and made 347 offers; no fewer than 140 of these students have made Salford their first choice for modern languages, and their grade-point average on admission will be over eleven. Many of these students will have only A and B grades at A

level. They will, in short, be among the very best linguists of their generation, who happen not to want to follow a literary course. Furthermore, they will be by a significant margin the best quality intake into the university as a whole. Yet this thriving department has, incredibly been told to reduce the scale of its operations. To attempt to comprehend the UGC's judgment in this case - which I doubt is an isolated one - we need to know:

(i) in which other university has a major department with the application, admission and employment pattern described been told to reduce its activities?

(ii) in which other university has that university's best department in terms of quality of student intake been told to contract?

I have, of course, put these questions directly to Dr Parkes; I will transmit his reply to *The THES* in due course.

Yours sincerely,

(Professor) MARTIN HARRIS,
Dean of Faculty of Social Sciences and Arts, University of Salford.

Sir, - Under the heading "Support your local UGC" the editorial (*THES*, July 3) sets out to persuade academics and others of the importance of backing the "broad strategy" of the UGC embodied in its recently announced cuts in university finance. In pursuit of this difficult task the editorial sets up and demolishes a straw man, and follows up with a feeble and half-hearted apology for the UGC.

By conjuring up an image of the UGC as a "Prussian High Command" controlling "every timetable" in the universities the editorial is then able to suggest that the actual guidelines are not at all as bad as this critic's image would suggest. But this is hardly the point. Criticism of the UGC's role has not lost any of its validity because the metaphorical Prussian jackboots are nowhere in sight. The objection to the UGC is

Part-time students

Sir, - Bill Taylor (*THES* July 3) acknowledges the back-fire from gaining full credit in course terms for half-time students has been that these students will now be charged full fees. To the Treasury official the reasoning behind this outcome must be self-evident. A half remains half, whether you are talking about resources or fee income.

But is a half always a half in this context? Does the half-time student over two years equate with the full-time one-year student in every respect? Both categories of students undoubtedly receive the same award following a similar amount of teaching; the one simply has it spread more thinly than the other.

However, has the half-time student the same opportunity to use the library and other university facilities (union, recreational and social)? In the case of "half-time" in-service students, the teachers who mostly carry on their normal day-to-day duties and attending on a day-release basis. These students just do not have the time to enjoy the facilities available to the full-time student.

An institution which has a substantial full-time enrolment can often provide the teaching space for a half-time student at very little additional cost; some overtime for porters, etc., slightly higher fuel costs cannot in practice make as much use of university facilities as the full-time student and the institution will normally achieve a lower space cost by using existing teaching facilities in these circumstances.

If DES policy is to encourage an expansion of in-service education, it half-time student in real terms more or not the full-time student. (Whether in terms of actual costs incurred or not, the question is not a matter of public and non-public sector institutions certainly re-

quire further investigation.) Unfortunately, while fighting for the proper recognition of half-time students within London University, Bill Taylor's arguments have been overheard by policy-makers elsewhere in the education system. Conversations overheard can easily be misunderstood. Can these latest policy shots be bounced back by a combination of good sense and more accurate costing information?

C. W. HARVEY,
School of Education, University of Bristol.

Sir, - The recent UGC letter, in keeping with its general tone, must be seen as a direct attack on part-time education.

Paragraph 1(a) makes assumptions on the level of fees for part-time students. If implemented these would cause a fourfold rise in the rate of part-time fees at this college, which exists mainly to provide full-time education.

Taking into account books, travelling, etc. as well as fees, a part-time undergraduate earning around £5000 a year would have to spend about one-third of disposable income on his or her course. This is on top of the hardships already endured by part-timers, most of whom have a full-time job and have to meet all the costs incurred with their course.

I fear for the future of part-time education, and for the opportunities it has given people unable to follow a full-time course in the past.

What price equality of opportunity now?

Yours faithfully,
D. E. MUDDIMAN,
President, Birkbeck College Students' Union, London University.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

SSRC subject committees

Sir, - I echo the concern of Mr Ardener (*THES*, June 26) at the proposed restructuring of SSRC subject committees. Three alternative proposals were put to the SSRC Council, all of which involved the abolition of the statistics and computing committees, and their replacement by a Research Methods Advisory Committee which would have no power to award research grants or studentships, or to engage in any substantive research.

This abandonment of research support for statistics is indefensible. It comes at a time when the increasing complexity of social research studies is requiring much greater sophistication in statistical models for effective data analysis. Few social scientists are adequately trained in modern statistical analysis, and competent statisticians interested in applications in the social sciences are in short supply.

I have recently reanalysed, with SSRC research support, Professor Neville Bennett's educational research data on teaching styles and pupil performance, using newly developed sophisticated statistical models. The original conclusions were substantially altered in the reanalysis.

In a major paper to appear in the *Journal of the Royal Statistical Society* on the statistical modelling of teaching styles surveys, have pointed out the importance of statistical modelling for social survey research in general. One of the discussants raised the same issue of public confidence: "If the reading public interested in education, and in this I include politicians and administrators as well as teachers and parents, are to become used to a pattern of publication of clear-cut results followed by their complete dismissal by some apparently equally eminent authority, then the credibility of any educational research and its statistical foundations will be, at the least, very seriously eroded."

Should we now define that specific term "centre of excellence" - a university in which a member of the UGC has been educated or in which he or she has taught. Could it be that Salford, Aston, Bradford, Stirling etc. are being punished because none of them is either the alma mater or the employer of one of those excellent fellows.

Yours sincerely,
FRED SINGLETON,
21 Eaton Road, Ilkley, West Yorkshire.

Third World aid

Sir, - I refer to the article by Richard Griffiths (*THES*, July 3) and the somewhat acerbic reply by Professors Thistlethwaite and Butterworth and Mr David Bethel (*THES*, July 10).

As a new member of the IUPC I am reluctant to enter the lists with such redoubtable and distinguished protagonists, but the issues are too important to be clouded by *amour propre*. Indeed we need to clarify the debate for those less versed in the somewhat esoteric and byzantine world of international higher education and the role of ODA and British Council in our aid programmes.

The fears of Richard Griffiths as a former director of the Inter University Council are understandable. The manner of the passing of the IUC and TETOC (coupled with the present role of UGC) give rise to concern in those ever vigilant against the encroachments of the intrusive state. He is surely correct in his point that the actual work will be done by staff in our universities and polytechnics and there is a need to underpin the proposed role of the IUPC with a sub-structure to relate to the expertise of the institutions. A recent survey undertaken by the International Office of this polytechnic revealed the existence of some 56 similar centres in British universities and polytechnics. This available resource must be utilized if the IUPC is to be pro-active and not merely reactive to matters referred to it.

The formation three years ago of the International Higher Education Standing Conference (IHESC) and its continued existence on a voluntary basis is an indicator of the enthusiasm and skill which is available awaiting focus and co-ordination and utilization.

Another worry, not mentioned by Richard Griffiths, is the omission of a large section of the public sector - the colleges and institutions of higher education. Hull and Baling for example are polytechnics in all but name, and the lack of representation from the colleges of further education. Those of us who meet overseas academics from the developing world know that often their real needs are best provided for at sub-degree level.

The IUPC must be welcomed as a positive bridge across the binary line and it is too early to comment on its effectiveness or otherwise of this new arrangement. Certainly the speedy and efficient discharge of the business at the first meeting is a portent of something - colleagues at my table were still finding their way through the admirably clear agenda when the chairman closed the meeting. We must, as someone once said, wait and see; but not too long.

Yours sincerely,
COLIN MILNER,
Assistant director and chief administrative officer, North East London Polytechnic.

Polytechnic courses

Sir, - In the recent House of Lords debate on higher education Lord Crowther-Hunt (*THES*, July 3) said that it was a "total scandal" that polytechnics were producing twice as many graduates in the arts and social studies as there were in science, technology and engineering.

If anything is a "total scandal" it is that he feels free to make such an untrue statement. This is particularly so when he once had responsibility for this sector of education and will

Obviously there is considerable scope for change within the universities, both in their organization as well as in the content and methods of teaching. Such issues must be fully discussed by the academic as well as the non-academic community, and policies democratically arrived at as part of a programme of social and economic expansion. They should not form part of a cost-cutting exercise conducted by an undemocratic elite operating as a transmission belt for destructive and anti-social government policies. The refusal of the UGC to shift from this new position is the best argument in favour of its democratization or its outright abolition.

Yours sincerely,
DR JOHN KELLY,
Lecturer, Department of Industrial Relations, London School of Economics.

Sir, - There may be a rational explanation for the otherwise inexplicable recommendations of the UGC mandating:

If one examines the educational background and present occupations of the members of the committee, it appears that all those institutions in which a member was educated or has recently taught sustained less than average cuts, or in the case of LBS, actually received an increased grant. At the other end of the scale, those who suffered the biggest reductions are institutions with which UGC members have had no connections.

Should we now define that specific term "centre of excellence" - a university in which a member of the UGC has been educated or in which he or she has taught. Could it be that Salford, Aston, Bradford, Stirling etc. are being punished because none of them is either the alma mater or the employer of one of those excellent fellows.

Yours sincerely,
FRED SINGLETON,
21 Eaton Road, Ilkley, West Yorkshire.

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therefore be taken by the even more uninformed as speaking authoritatively.

Courses in surveying, architecture, accountancy, law, business studies - even nursing, physiotherapy, social work and applied languages - do not come under the generic heading of arts and social studies as it is meant by the universities and these subjects form an initial part of the polytechnic provision. Thus the ratio of vocational/professional courses to arts and social studies is just about the reverse of that implied.

SSRC subject committees

Sir, - I echo the concern of Mr Ardener (*THES*, June 26) at the proposed restructuring of SSRC subject committees. Three alternative proposals were put to the SSRC Council, all of which involved the abolition of the statistics and computing committees, and their replacement by a Research Methods Advisory Committee which would have no power to award research grants or studentships, or to engage in any substantive research.

This abandonment of research support for statistics is indefensible. It comes at a time when the increasing complexity of social research studies is requiring much greater sophistication in statistical models for effective data analysis. Few social scientists are adequately trained in modern statistical analysis, and competent statisticians interested in applications in the social sciences are in short supply.

I have recently reanalysed, with SSRC research support, Professor Neville Bennett's educational research data on teaching styles and pupil performance, using newly developed sophisticated statistical models. The original conclusions were substantially altered in the reanalysis.

In a major paper to appear in the *Journal of the Royal Statistical Society* on the statistical modelling of teaching styles surveys, have pointed out the importance of statistical modelling for social survey research in general. One of the discussants raised the same issue of public confidence: "If the reading public interested in education, and in this I include politicians and administrators as well as teachers and parents, are to become used to a pattern of publication of clear-cut results followed by their complete dismissal by some apparently equally eminent authority, then the credibility of any educational research and its statistical foundations will be, at the least, very seriously eroded."

Yours sincerely,
MURRAY AITKEN,
Director of the Centre for Applied Statistics, Lancaster University.

Overseas chairs

Sir, - As a former employee of the IUC who handled, amongst other programmes, recruitment from the UK for UC Botswana under the guidance of Ted Jones, I can assure J. Stanford Aston (*THES*, July 10) that he is entirely mistaken in his belief that the British Council has the power to dissuade overseas universities from requiring applicants for Chairs to have a PhD.

These universities quite rightly resent and ignore any such attempts to dictate policies to them. As Mr Aston suggests, it would be impossible to decline to cooperate with this particular policy, but it would be an extraordinary decision for a body that now has to call itself the Committee for International Cooperation in Higher Education. The alternative would be to omit the PhD requirement from the job description and leave UC Botswana to throw away the applications of those without a doctorate. Would this help?

Yours faithfully,
PIERS PENNINGTON,
8a Burton Road, Kingston-Upon-Thames.

It would be appropriate if Lord Crowther-Hunt did his homework and then made another statement. It is proving difficult enough for the polytechnic to maintain those courses which we and Lord Crowther-Hunt feel to be so important - it will be even more difficult if he contributes to a myth that they have gone already.

Yours faithfully,
R. M. WOOD,
Chairman, education development committee, Association of Polytechnic Teachers